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An Address

ON

MORBID GROWTHS, WITH A SUGGESTION AS TO TREATMENT.

Delivered before the Swansea Medical Society

BY A. F. BLAGDON RICHARDS, M.A., M.D. CANTAB.,

AURAL SURGEON AND ASSISTANT SURGEON TO THE SWANSEA GENERAL HOSPITAL.

GENTLEMEN,—In the treatment of morbid growths medicine has apparently altogether failed up to the present. Bromide of arsenic has occasionally delayed the progress of the disease and afforded relief to pain but without any permanent effect. Various aniline dyes have been injected subcutaneously in the hope of staining and impairing the vitality of the nuclei of the proliferating cells but without any definite results. Surgery has effected much, and in the case of so-called benign growths it is seldom that operative interference will fail to relieve or effect a cure. But in the treatment of malignant growths it is only too often that surgery fails to afford more than temporary relief, sometimes not even that. Patients unfortunately have such a dread of operative interference that they will submit to it only when the disease has advanced so far that no hope of permanent relief can be entertained. Then even after an operation, however brilliant, however daring, recurrence is almost certain. Oftentimes the growth is so situated as to prevent any possibility of its extirpation. In other cases, however early the operation is undertaken, the nature of the growth—as, for instance, a melanotic sarcoma—or its situation renders recurrence only too probable. And so, year by year, thousands die lingering deaths after months, or even years, of agony and distress, both mental and physical—die from the most hopeless and oftentimes the most loathsome form of disease. It has been estimated from statistics that there are 30,000 patients at all times in England suffering from cancer.

When we consider the phenomena of development and growth it must be a matter of surprise, not that we meet with these morbid growths often, but that we do not meet with them much oftener. It simply illustrates the marvellous accuracy with which nature works. Life starts as a single cell, a unicellular organism. This cell rapidly divides and subdivides until three distinct layers of cells can be easily distinguished—the epiblast, the mesoblast, and the hypoblast—and from these the complex tissues, the highly developed organs of the adult, are formed. From each layer certain definite tissues are developed with absolutely no variation, and of these tissues the different organs are composed. And then, when development is completed—when growth as a whole is at an end—each group of cells lives and is nourished and performs its functions within the most exact limits, without in any way invading or encroaching upon neighbouring groups of cells for the remainder of the life of the individual, perhaps for a period of 60 or 80 years. The wonder is, not that we occasionally meet with abnormalities in the development or growth of cells, but that we do not constantly meet with them, that we do not oftener see congenital malformations due to defective development or growths resulting from the disordered activity of different groups of cells. Unfortunately, however, cases of abnormal growth are met with far too often; so often, indeed, as to inspire everyone at some time or other with a dread lest a similar condition should affect him. Sometimes the growth, while fulfilling no physiological function, is of complex structure and highly organised, shows no tendency to spread or infiltrate surrounding tissues, always remains distinctly localised and definite in outline, and does not recur after removal. It is then termed a benign growth. Very often, however, the growth is of very simple structure, composed only or almost entirely of one of the elementary tissues; it rapidly spreads and infiltrates surrounding structures; is therefore ill-defined in outline; its elements are carried in the lymph or blood stream to start secondary growths in distant parts, and always after seemingly complete removal there is a strong probability of recurrence. These are the malignant growths that so often baffle all surgical skill.

Now the benign and the malignant growths present certain features in common. Although they run such a different course clinically they cannot be regarded as entirely distinct in character. They resemble each other in that they fulfil no physiological purpose, in that they constitute a malformation by which we are able to recognise them; a malformation resulting from an overgrowth, a disordered nutritive activity of certain elements present in the structures from which they spring. In the benign tumours growth is, as a rule, slow, the structure is highly organised and resembles that of perfectly developed tissues, but there may be mechanical interference with the functions of surrounding organs due to pressure or to occlusion of ducts or passages. They may cause severe hæmorrhage and seriously interfere with the health in many ways, so that although structurally they may be benign yet clinically they may approach the malignant tumours in their effects. In the malignant tumours growth is usually very rapid and the structure is elementary or embryonic. But in both forms, as I have said, there are disordered nutritive activity and multiplication of cells, towards no definite end, to serve no useful purpose.

The problem that has baffled solution up to the present, that has defied all attempts at a satisfactory explanation, is as to the cause at work in producing these growths. For years past ceaseless investigation has been going on in an attempt to discover some micro-organism, some intracellular parasite which might account for the vicious activity of cell growth, but so far without any definite result. And for my own part I think that the result of work in this direction will always be negative. I think that the factors at work in producing a malignant growth are similar to those producing a benign growth but intensified in action and that one might just as well search for parasites or micro-organisms in benign growths as their cause as in malignant. I think that the cause is, in all probability, some physiological aberration in cell growth and activity. If these growths were due to any parasitic organism, anything of an infectious or communicable nature, then surely long ere this there would be many cases on record in which there would be some grounds for thinking that the morbid growth had by means of these organisms been communicated from one person to another. It would more frequently happen that two or more cases would occur in a family where the disease had shown itself in one member. This, however, is quite exceptional and may when it occurs be put down to a hereditary tendency. As there is often a hereditary tendency to congenital malformations, so it is quite reasonable to think there may be a hereditary tendency to disordered cell growth; indeed, there is a complete dearth of any evidence to the effect that morbid growths of any description are in any way infectious or communicable from one to another. Surgeons and pathologists have, one might say for ages past, been handling and examining these growths both in the process of excision and at varying periods afterwards and yet, as far as I know, there is not a single case on record where the disease has been communicated in this way.

There are numerous instances on record where growths have appeared after injury or irritation of some kind or other. In fact, this is a matter of common observation. Papillomata are frequently met with on cutaneous surfaces when constantly exposed to the action of irritating fluids. Epitheliomata of the lips are often started by pipe-smoking, especially where a short stem and perhaps a rough and sharp mouthpiece are used. The constant irritation of a carious tooth will often excite a lingual cancer. In two cases of sarcomatous growths I have had to do with the disease started after an injury and was in all probability excited by the injury. In one case there was a history of a small bone having lodged in the tonsil of the patient. It must have been small as it escaped observation. Eventually an abscess formed and the piece of bone was dislodged. Soon afterwards a sarcomatous growth appeared on the site of the injury and eventually led to the death of the patient. In the other case a sarcoma appeared in the breast of a young woman some little time after a severe blow upon it. Epitheliomata sometimes occur in old scars often long after the scar is originally acquired and they seem preferably to develop in those scars which have been subjected to long periods of irritation, as in cicatrices of the limbs which

hamper movement and are thus subjected to undue tension. There is one case recorded in which the disease appeared 61 years after the original injury. It is well known that an epithelioma is very apt to occur in a leucomatous patch on the tongue where there has been an unhealthy condition of the epithelium owing to irritation. It can, I think, be accepted as a fact that any prolonged irritation or injury may eventually lead to a morbid growth. It may be an innocent growth such as a papilloma or malignant as an epithelioma. Now I think that the effect of any frequent traumatism, any irritation of a group of cells extending over a long period, must be to pervert the nutrition of those cells. Each time an injury or irritation is experienced there must be an effort on the part of the cells affected to resist that injury and to effect repair. Owing to the oft-repeated and vicious stimulation the nutrition of the cells becomes perverted and a vicious activity results, leading to an overgrowth which serves no physiological purpose, an invasion of other groups of cells and tissues which leads to a disastrous ending. If, owing to the period of life, the nutritive activity of the cells which are irritated or injured is great, or, on the other hand, the power of resistance of neighbouring tissues is lessened, then the tendency to abnormal and pernicious growth is increased. In youth and early middle age, when the muscular, fibrous, and osseous structures of the body, all derived from the mesoblast, are growing rapidly or at the height of their functional activity, then there is a tendency to growths of mesoblastic origin, benign growths highly organised, as the angiomata, neuromata, and lymphangiomata, or simpler, as the lipomata, fibromata, and myomata, or malignant growths, as the sarcomata. If we meet with epithelial tumours at this time of life they are generally highly organised, containing a good deal of well developed connective tissue, and are benign in character, as, for example, the adenomata and papillomata. Later in life the nutritive and functional activity of mesoblastic tissues wanes. Degenerative processes are apt to set in showing greatly impaired nutrition. Thus we have atheromatous and calcareous degeneration of arteries appearing, the arcus senilis, atrophy and brittleness of bone, feebleness of muscle, and the wrinkling of the skin all showing impaired nutritive activity of the mesoblastic tissues. And it is a significant fact that about this time benign tumours of mesoblastic origin which may have persisted for years show a distinct tendency to spontaneous absorption. Thus fibroid tumours of the uterus often disappear spontaneously after the menopause. Diminished nutrition due to cessation of the uterine function of course plays a part in producing this result. At this later period of life another class of tumours is more frequently met with, tumours of epiblastic or hypoblastic origin, epithelial tumours of various types. There is no reason to believe that late in life epithelial tissues show the same degree of diminished activity as mesoblastic tissues. They do not show any marked degenerative changes such as are met with in epithelial cells under diseased conditions. If there be any decrease in functional activity it is in all probability due to an imperfect blood-supply resulting from arterial degeneration. These tumours are of a low type and elementary structure, never highly organised. There is an absence of well-formed connective tissue in them. They are almost invariably malignant when appearing late in life and rapidly invade surrounding structures. Possibly owing to diminished activity in the mesoblastic tissues the power of resistance to this invasion is lessened. These epithelial tumours are especially apt to occur in organs where great variations in functional activity take place physiologically, where metabolism may at one time be most active, at another very feeble, as in the breast and uterus. These organs are more frequently attacked by malignant disease than any other and in them one would expect perversion or disorder of nutrition to take place most readily. The tumours are liable to occur in places where the epithelium is exposed to injury and long-continued irritation, as in the lips and tongue. They also occur at other orifices, such as the pylorus, the os uteri, and the rectum, and this peculiarity has been explained by the complicated arrangement at these points of the germinal structures, where the germinal membranes join or where folds occur. At these places variations in nutritive activity would be more likely to take place. I have dealt with these facts because they tend to show that morbid growths are due to a perversion in the nutrition of the groups of cells from which they spring, a vicious and disorderly nutrient activity causing an overgrowth of cells which serves no physiological purpose and which in the case of the malignant growths leads to the death of the individual. The cells, instead of living and growing strictly within their physiological limits, acquire piratical tendencies and invade and destroy neighbouring structures. The cells of a growth correspond in appearance to cells found in normal and healthy tissues, modifications occurring perhaps when the growth is very rapid and there are altered conditions of pressure. Injury or prolonged irritation undoubtedly initiates this morbid activity in a number of cases, probably in more cases than are apparent, unless the history of the patient is very carefully inquired into. Slight injuries are apt to escape notice. Undoubtedly there are other factors at work as well. Injuries and irritation in the vast majority of cases produce no such evil effects. Amongst the millions who are addicted to tobacco smoking very few comparatively develop a cancer of the lip or tongue. It may be that in a certain proportion of people there is a constitutional tendency, a peculiarity of the tissues which renders them more liable to this disordered cell growth, to this vicious departure from physiological limits, and that in them causes, ineffectual in other people, suffice to start the morbid action.

Now it is a universally accepted fact that the nutrition of every organ, every tissue, every living cell in the body, is largely under the control of the nervous system. That wonderful equilibrium to which I have already alluded, of life, of growth, of nutrition, of function, between the countless groups of cells of which the body is composed is largely maintained by the nervous system. Each cell lives, grows, multiplies, and performs its work according to the needs of the economy, in the strictest order within its own allotted space. There is no invasion of neighbouring cells, no encroachment, no overgrowth—a wonderful equilibrium of growth and energy; and this is maintained through the agency of the nervous system by countless impulses flashed along its motor, its excitory, its inhibitory, its trophic nerves, either as the result of automatic action of the nerve cells or in response to centripetal messages reaching them. So complete are the ramifications of nerve fibrils throughout the body that, to take the skin as an example, you cannot stick a pin-point in any part of its surface without exciting a sensory impulse. The nutritive and metabolic activity of a cell are inseparably connected with its functional activity. Each cell has its function and if that function be properly exercised its nutrition must be correspondingly good. If there be no exercise of that function then there is diminished metabolism, diminished nutrition, and atrophy is apt to follow. The so-called trophic nerves are, I think, simply the nerves that govern the functional activity of the parts they supply. It is extremely improbable that there are nerves whose only duty is to regulate nutrition. This effect is simply secondary, following the impulse which excites activity. The impulse which causes a breaking down of the cell substance and a setting free of energy in some form or other also supplies the stimulus which leads to a building up again. The increased blood-supply which always accompanies functional activity is a proof of this. A freer supply of blood is necessary to make good the waste. Functional activity is directly under nervous control. Each cell may have its functional activity excited or inhibited by nervous impulses. Of course, this can be observed most readily in muscular and glandular tissues, but it is no doubt true of other cells which play a less prominent part in the life of the individual. I may cite one experiment showing that nervous influence exerted on cell metabolism is due to direct stimulation of the cell rather than an alteration in its blood-supply. If in a rabbit the blood-vessels of the submaxillary gland be ligatured then stimulation of the seventh nerve just above the point where the chorda tympani nerve is given off will still produce an active flow of saliva. Here there can be no alteration in the blood-supply and the saliva must be secreted from the lymph in the lymph spaces owing to direct stimulation of the cells. I will not dwell on this point but no doubt many familiar instances will occur to you which show the direct influence exerted by the nervous system on cell metabolism. I have endeavoured to show that nervous influences—or, in other words, nerve impulses—are largely concerned in regulating the nutrition, metabolism, and growth of cells; in preserving a nutritive and metabolic equilibrium between the constituent elements and groups of elements in the body.

An inquiry now into the nature of these influences must, I think, prove interesting. Experiments tend to prove that electrical phenomena are constant in muscle, nerve and gland, and presumably other structures. By means of extremely delicate instruments electrical currents have been demonstrated in freshly prepared specimens of nerve or muscle which have not yet lost their irritability. These muscle or nerve currents can be made to excite muscular contraction without any adventitious stimulus of any kind. Thus, if the transverse and longitudinal surfaces of a frog's nerve muscle preparation be placed on non-polarisable electrodes and the circuit be closed by dipping the wires coming from the electrodes in mercury the muscle contracts. If in the muscle nerve preparation the nerve be placed so that it touches the longitudinal and the transverse surfaces of the muscle the circuit of the muscle current is closed, the nerve is stimulated, and immediately the muscle itself contracts. It has been argued that the electrical currents thus demonstrated are due to chemical action taking place on the cut surface of muscle or nerve. But these currents are not present in dead muscle or nerve in which the irritability is lost, so that, if due to chemical action, that action itself must in some way be connected with the living condition of the muscle and nerve. Again, the "negative variation" which occurs in the muscle current when the muscle is stimulated to contraction through its nerve shows that the action of contraction is accompanied by definite electro-motive disturbance in the muscle substance. It has been shown that the "contraction wave" which passes over a muscle is preceded by a "negative wave" of the muscle current, the latter occurring during the latent period. A single contraction shows a muscle current. This is shown in a contracting heart which is placed upon the non-polarisable electrodes of a sensitive galvanometer. Each beat of the heart causes a deflection of the needle which occurs before the contraction of the cardiac muscle during the latent period. A similar "negative variation" of the nerve current has been observed during the passage of a nerve impulse, showing clearly that the functional activity of a nerve is accompanied by some change in its electrical condition.

A series of experiments on glandular tissues also shows that the activity of a gland is accompanied by electro-motive disturbances. In the submaxillary gland of a dog while at rest the hilus is positive towards other parts of the gland. During secretion the excitatory change on stimulating the chorda is a positive variation of the current of rest, the hilus of the gland becoming more positive. Atropin abolishes the chorda variation. On stimulating the sympathetic the excitatory change is of an opposite sign to that of the chorda—the hilus becomes less positive and there is a negative variation. In the intestinal mucous membrane it has been found that there are currents of rest, the inner surface is negative and the outer surface is positive, and stimulation of the secretory nerves of these membranes affects the currents of rest. These experiments show that in glandular as in muscular tissues there are definite electro-motive disturbances during activity. But not only are these electro-motive disturbances constant in muscle, nerve, and gland but they are met with in outer structures. In the skin of the frog the outer surface is positive and the inner is negative and in this on stimulation there is a positive variation of the current. Atrophy or destruction of the glands destroys the power of secretion and the secretion current. The variation therefore may be considered as due to the secretion going on. Some most interesting experiments have been made relating to eye currents and in these the normal the physiological stimulus of the eye has been used—namely, light. In a freshly excised eyeball the cornea is positive as to the transverse section of the optic nerve. If it be placed on non-polarisable electrodes connected with a galvanometer, so that the cornea rests on one and the transverse section of the nerve on the other, then a current is demonstrated by the galvanometer. If now a strong light be allowed to fall on the eye there is a positive variation of the current. Yellow light is most powerful in producing this effect. "The inner surface of the passive retina is positive to the posterior. When the retina is illuminated there is a double variation, a negative variation with a preliminary positive increase, while when the light ceases there is a simple positive variation. Retinæ in which the usual purple has disappeared owing to the action of light show no variations" (Kuhne and Steiner). The negative variation in nerves is absent as soon as they lose their excitability.

There is no exact knowledge of the nature of a physiological or normal nerve impulse, but I think there are reasonable grounds for ascribing it to some alteration in the electrical condition, the electrical tension of the nerve. There is no form of energy other than electric energy that could act in the body with the necessary degree of rapidity, of accuracy, and of delicacy to produce the different muscular movements that we are capable of. Chemical action, molecular vibration would be too slow and not sufficiently under control. Those of us who heard Kubelik the other night must have wondered at the marvellous accuracy displayed by him, the rapidity with which he poured out notes from his instrument, each note formed by the placing of a finger on exactly the right spot on the string within the fraction of a millimetre and drawn forth by the most accurate handling of the bow in the other hand. The nerve impulses giving rise to these movements can be far better explained by electro-motive disturbance than in any other way. It is in accordance with facts. In the electrical eel the electro-motive power may be stored up at such a degree of tension in the cellular structures, termed the electrical plates, that the shock when the circuit is completed is sufficient to stun a man. The marvellous accuracy with which messages can be recorded by electric disturbance is shown in the telephone and the phonograph. In the telephone you can not only easily make out the words but at once distinguish the timbre of the voice. At a distance of 60 miles we are at once able to distinguish the particular tones of a friend's voice. And so in the phonograph, although a record may show only a few indistinct scratches on a smooth surface, caused by electrical energy, yet in those scratches when transformed into sound we are able to recognise the multitudinous tones of orchestral or choral music.

I will only trouble you with one other point in this connexion. In all cells two distinct portions are always observed, the nucleus and the extra-nuclear substance. In nerve cells this distinction is especially marked. In view of the electrical phenomena which I have so briefly touched upon it is a reasonable hypothesis that these portions may be electro-motive towards each other, the one positive, the other negative. During stimulation from any cause metabolism takes place and this electro-motive condition is disturbed, is altered; as a result of this disturbance the electric condition of the nerve fibril connected with the cell is also altered and thus gives rise to the impulse. This impulse travelling to the cell in connexion with the other end alters the electro-motive condition in that cell and starts metabolic and nutritive and functional activity.

I have endeavoured to show that the abnormal cell growth constituting a tumour is, in all probability, due to a disordered and vicious nutritive activity on the part of the original cells; that nutrition generally is regulated and governed by nervous influences; that these influences are, judging by the results of experimental inquiry, electrical in character, of the nature of an electro-motive disturbance; thus we have the metabolism, the functional activity, the nutrition of cells governed by electrical energy. I have been leading up to my suggestion as to treatment. As far as I am aware, the electric current, the different forms of electric energy, have never been systematically tried in the treatment of morbid growths. And yet I think that there are good reasons, as I have pointed out above, for at least making a careful, systematic, and prolonged trial. In the benign growths one could not expect much. They are so highly organised, so well nourished, so similar to normal healthy tissues, that they would not be easily acted on by any agent. But in the malignant tumours, badly organised and badly nourished, it is feasible that they might be so affected by electrical energy as to have their metabolism and growth checked. It might have an inhibitory effect while at the same time possibly increasing the power of resistance of neighbouring tissues. I would give each of the different forms of electricity a trial—the galvanic, the faradic, and the static current. In this way the vicious and disordered activity of cell growth might once again be regulated and brought under control, the electric current simulating normal and healthy nervous impulses. I think that this treatment, bearing in mind the arguments which I have adduced above, worthy of careful and systematic trial, currents of varying degrees of intensity being used for long periods. The electrode over and around the growth should consist of a large number of fine copper points evenly distributed over the inner surface of a cap or shield of soft indiarubber which could be applied closely and evenly

to the surface surrounding and overlying the growth. The battery supplying the current could be worn and carried about by the patient. In this manner the electric current would reach and traverse the growth from numerous points in much the same way as normal nervous impulses reach the tissues through the numberless endings of the delicate nerve fibrils lying distributed between and amongst their constituent cells.

PARATYPHOID FEVER.

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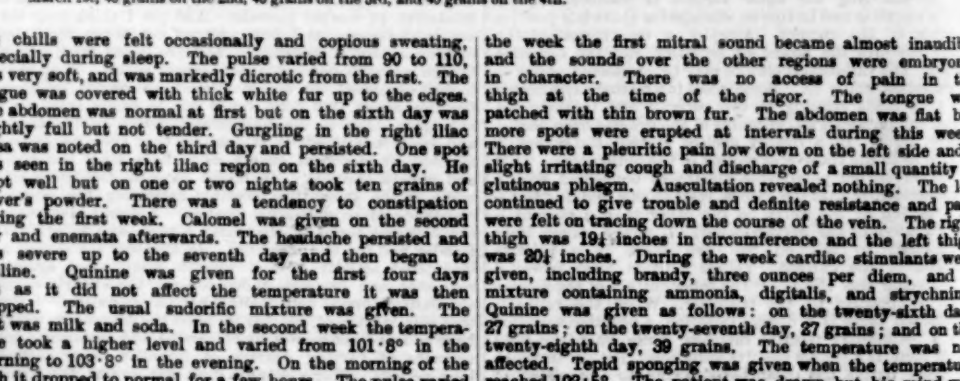
THE patient was a subaltern officer, aged 22 years, of strong and sound constitution. He had never had malaria or enteric fever. He had never been inoculated with anti-typhoid serum. On Jan. 3rd, 1905, he left Lucknow on completion of a riding course and returned to his station in Central India, taking his meals at various refreshment rooms *en route*. He first felt unwell on Jan. 26th after a long day's shooting. He complained of frontal headache and was "off his feed." He was sent out on survey duty in the district and had to stand about in water and camped out at night. During this time he felt seedy and the headache and anorexia increased and he had fever on the 30th. On the next day I went out to see him and found him in a state of high fever without rigors, but accompanied by vomiting, complete anorexia, and headache. Quinine and diaphoretics and phenacetin were given, the first at the rate of 40 grains per diem. The symptoms during the first week of the disease—i.e., from Feb. 1st to 8th—were as follows. The temperature ranged between 100° and 103·5° F., being always lowest at midday and highest in the evening (see chart). There were no rigors but chills were felt occasionally and copious sweating, especially during sleep. The pulse varied from 90 to 110, was very soft, and was markedly dicrotic from the first. The tongue was covered with thick white fur up to the edges. The abdomen was normal at first but on the sixth day was slightly full but not tender. Gurgling in the right iliac fossa was noted on the third day and persisted. One spot was seen in the right iliac region on the sixth day. He slept well but on one or two nights took ten grains of Dover's powder. There was a tendency to constipation during the first week. Calomel was given on the second day and enemata afterwards. The headache persisted and was severe up to the seventh day and then began to decline. Quinine was given for the first four days but as it did not affect the temperature it was then stopped. The usual sudorific mixture was given. The diet was milk and soda. In the second week the temperature took a higher level and varied from 101·8° in the morning to 103·8° in the evening. On the morning of the 14th it dropped to normal for a few hours. The pulse varied between 82 and 104, the dicrotism was less marked, and the pulse was very soft. The tongue remained foul and the fur somewhat browner. The abdomen was slightly full and tympanitic and some more characteristic spots appeared. The spleen had not been palpable at all up to this date. Constipation was the rule but on the tenth day there was one loose dark motion. His mind was quite clear, even acute; he slept well at night and never muttered or wandered during sleep. He began to look drawn but did not present the typhoid facies; he had no tendency to somnolence and watched narrowly everything which went on in his room. In the third week the temperature resembled that seen during the fourth week of an average case of enteric fever when it generally oscillates from 97° to 102° before finally settling down. The pulse dropped in rate and did not reach 100 beats per minute; it remained, however, very soft, almost collapsing. The heart remained normal though there was a tendency for the beats to approach each other in character. Spots continued to come out; the abdomen was less distended. The spleen for the first time was just palpable. Occasional diarrhœa of a light colour was noted, though enemata were generally needed. The other signs were those of declining enteric fever. On the nineteenth day he complained of pain in the left groin and down the leg, accurately following the course of the femoral vein. Belladonna and glycerine were applied and the limb was put on a Macintyre splint. This symptom became more marked during the next few days and there was undoubted thrombosis of the left femoral vein and the thigh was one and a half inches larger than its fellow and the calf of the leg one inch larger in circumference. He was drawn and thin in appearance but was not like a typical typhoid case. In the fourth week the temperature remained as before until the twenty-third day, when it kept up, and on the twenty-fifth day it shot up to 103·6° and at midnight to 106° and was accompanied by a rigor, followed by considerable collapse. The pulse was generally over 100 and was soft and collapsing. Towards the end of the week the first mitral sound became almost inaudible and the sounds over the other regions were embryonic in character. There was no access of pain in the thigh at the time of the rigor. The tongue was patched with thin brown fur. The abdomen was flat but more spots were erupted at intervals during this week. There were a pleuritic pain low down on the left side and a slight irritating cough and discharge of a small quantity of glutinous phlegm. Auscultation revealed nothing. The leg continued to give trouble and definite resistance and pain were felt on tracing down the course of the vein. The right thigh was 19¼ inches in circumference and the left thigh was 20¼ inches. During the week cardiac stimulants were given, including brandy, three ounces per diem, and a mixture containing ammonia, digitalis, and strychnine. Quinine was given as follows: on the twenty-sixth day, 27 grains; on the twenty-seventh day, 27 grains; and on the twenty-eighth day, 39 grains. The temperature was not affected. Tepid sponging was given when the temperature reached 102·5°. The patient was drawn but his mind was clear and he slept well. In the fifth week (March 1st to 7th),



A, sponged. B, rigor. C, quinine. The rigor on March 4th was "very small." The daily amounts of quinine were 40 grains on Feb. 2nd, 36 grains on the 3rd, 40 grains on the 4th, 27 grains on the 26th, 27 grains on the 27th, 39 grains on the 28th, 30 grains on March 1st, 40 grains on the 2nd, 40 grains on the 3rd, and 40 grains on the 4th.

with regard to the temperature, rigors occurred on March 1st and 2nd respectively, the temperature reaching each time 105°. Heavy sweats followed and some collapse requiring stimulants. Otherwise the patient was more cheerful and better. The leg was less swollen and the pain was less. The abdomen was flat, the tongue was still patchy, and there was occasional diarrhœa of light stools. The patient continued to take about three pints of milk daily and broths. Bacilluria was noted and urotropine in eight-grain doses was given twice daily. The heart was weak and the brandy was therefore increased to four ounces daily. On the last day of the fifth week injections of quinine were commenced to see if the hitherto erratic temperature could be controlled. In the sixth week about 15 grains of sulphate of quinine were injected by the hypodermic method into the skin of the arm every day. The injections gave rise to no trouble except transient irritation and redness and subsequent induration of the sites. All the symptoms declined gradually and hereafter nothing of interest occurred. The pulse recovered its tone slowly. The lungs were examined at intervals and were normal throughout. The urine was examined four or five times; the specific gravity was generally about 1020 and no albumin or sugar was ever present. The diazo reaction was not examined for, owing to lack of the necessary reagents. Indican was abundant in the third week and almost non-existent subsequently. Convalescence was tedious and the officer was not in a fit state to travel home on sick leave until April 29th, nearly 12 weeks from the date of his attack.

The condition of the blood was as follows. On Feb. 3rd (the third day of the disease) the leucocytes were 6250 per cubic millimetre. Differential count (400 cells counted): polymorphonuclears, 60 per cent.; small mononuclears, 28 per cent.; large mononuclears, 11 per cent.; eosinophiles, 0; and mast cells, 1 per cent. No malarial organisms were seen after careful examination. There were no pigmented leucocytes. On Feb. 19th (the nineteenth day of the disease and the one on which femoral thrombosis occurred) the condition of the blood was as follows: hæmoglobin, 100 per cent.; red cells, 5,000,000 per cubic millimetre; white cells, 8125 per cubic millimetre; individual corpuscular richness, 1. Differential count (400 counted): polymorphonuclears, 72 per cent.; small mononuclears, 20 per cent.; large mononuclears, 7 per cent.; eosinophiles, 1 per cent.; and mast cells, 0. No parasites were seen. No pigmented leucocytes or débris of parasites were seen. On Feb. 25th, the twenty-fifth day of the disease (the day of the rigor and high rise of temperature), the white cells (average of two counts) were 9787 per cubic millimetre (400 counted); polymorphonuclears, 74·5 per cent.; small mononuclears, 17·0 per cent.; large mononuclears, 4·5 per cent.; eosinophiles, 2·0 per cent.; finely granular basophiles, 1·5 per cent.; and coarsely granular (mast cells), 0·5 per cent. The blood film was normal. No organisms were seen. (It was carefully searched on several subsequent occasions and no adventitious bodies were found.) On March 2nd, the thirty-first day of the disease (during the rigor week), the blood condition was as follows: hæmoglobin, 96 per cent.; red blood corpuscles, 3,513,000 per cubic millimetre; white blood corpuscles, 10,312 per cubic millimetre; and individual corpuscular richness, 1·37. Differential count (300 cells counted): polymorphonuclears, 76·6 per cent.; small mononuclears, 10·7 per cent.; large mononuclears, 10·4 per cent.; eosinophiles, 2·0 per cent.; and mast cells, 0·3 per cent. Three nucleated red cells (normoblasts) were counted. A few doubtful intracellular bodies were seen but they did not react to Romanowsky's stain in the characteristic manner of malarial parasites. No pigmented leucocytes were seen. On April 10th during convalescence the condition of the blood was as follows (the average of three observations was taken during the same hour): hæmoglobin, 100 per cent.; red blood corpuscles, 5,083,000 per cubic millimetre; and white blood corpuscles, 10,312 per cubic millimetre. The fresh blood was carefully examined without any result. The differential count (300 examined) was as follows: polymorphonuclears, 32·3 per cent.; small mononuclears, 35·3 per cent.; large mononuclears, 3·2 per cent.; eosinophiles, 28·6 per cent.; and mast cells, 0·6 per cent. These notes were made at the time. All the cells were perfectly distinct and characteristic and the slide was clear and well stained (Romanowsky). The protoplasm of the polynuclear cells was almost hyaline or at the most very faintly granular. The small mononuclears had a fair circle of protoplasm around the nucleus and were quite typical. The large mononuclears were very few in number but were quite typical. The extraordinary number of eosinophile cells was a very striking feature. They were ordinary coarsely granular eosinophile cells with a multiple nucleus but the limiting cell membrane was more defined than often is the case and there were none ruptured during the process of making the film. No parasites were seen and there were no pigmented leucocytes or malarial débris.[1] On April 20th the red blood corpuscles were 4,666,600 per cubic millimetre and the white blood corpuscles were 9375 per cubic millimetre. Seen in the fresh state large numbers of coarsely granular cells were seen. The red blood corpuscles formed rouleaux well. No parasites were seen. There was no movement of the red blood corpuscles or in the plasma in a hanging drop. The evening blood showed no filaria. The differential count of the above was as follows (200 counted): polymorphonuclears, 47·0 per cent.; small mononuclears, 12·5 per cent.; large mononuclears, 5·5 per cent.; eosinophiles, 35·0 per cent.; and mast cells, 0. The cells again were all just as in the previous blood of April 10th, but the eosinophile granules took on a less decided red and a more neutrophile reaction. (This, I believe, was due to the staining process, because the red blood cells in the former slide were pink and on this slide green. In other words, the second stain used was deficient in eosine.)

Widal's examination.—The blood was first sent up to the Pasteur Institute at Kasauli and after examination Captain G. Lamb, I.M.S., reported: "No reaction with 1 in 40 dilution." Another strain of bacillus typhosus was then obtained from Captain Kelly, I.M.S., of Shansi, a strain which had originally come from the Medical College, Calcutta. I made dilution of 1 in 2, 1 in 20, 1 in 100, and 1 in 200, and the following was noted. After 15 minutes a slight reaction was noted in the 1 in 2 and in the 1 in 20 dilution. This reaction was not increased at the end of an hour and at that time only a few small clumps were seen and the large majority of the bacilli remained actively motile. At the end of an hour no perceptible reaction could be observed in the 1 in 100 or in the 1 in 200. Latterly another strain of bacillus typhosus was obtained from the Kasauli Institute. Again no reaction whatever was noted after one hour in dilutions of 1 in 20, 1 in 50, and 1 in 100.[2] Cover-glass preparations made from the sputum showed a few coccoid bacilli mostly in groups or clumps. A few elements were longer and evenly stained but most were segmented and showed polar staining. No true cocci were present. Unfortunately, the lack of any apparatus in such an out-of-the-way station prevented any attempt being made to isolate the causative organism bacteriologically.

Remarks.—I think there is good ground for believing this to be a case of paratyphoid fever, inasmuch as clinically the disease ran a course very like true enteric fever and yet the serum failed to give the characteristic reaction with no less than three different strains of the Eberth-Gaffky bacillus. Although the clinical course of the disease was one which might stand for a typical attack of typhoid fever, yet on closer examination there were several features so unusual as to call for special notice. In speaking of the clinical picture presented by "the typhoid state" its value as a symptom depends entirely on the experience the individual observer has had in the normal course of the disease. To experienced practitioners the diagnostic value of the "typhoid state" transcends all other individual symptoms in importance and it was just this important symptom that was completely absent in the case under consideration. Previously to coming to India I had a series of nearly 300 cases under my immediate care spread over several years and so the clinical picture of British typhoid fever was a familiar one and during the unfolding of this case of fever the absence of all mental symptoms of true enteric fever struck me as most anomalous. Instead of the characteristic somnolence and apathy there were a hyperacuity, an almost morbid inquisitiveness, and an apprehensive watching of the most trivial details of nursing. Again, the course of the temperature was abnormal. The wide diurnal variation within a more or less limited range is suggestive of a septic rather than a typhoid process. This

[1] Santonin was given at night in full doses and sulphate of magnesia in the morning. Free purgation resulted but no worms were found. This was repeated with thymol without effect.

[2] On another occasion some blood was sent to the Petit Laboratory in Bombay, there to be tested with Ehrlich's original cultures of Eberth's bacillus, Gaertner's bacillus, and the bacillus coli communis. Unfortunately, owing to incomplete sealing of the tubes, the serum was not in a fit state for examination on arrival.

type is seen during the fourth week of an average typhoid case and corresponds to the time when the ulcers are bare and absorbing small quantities of septic material. In the case under consideration this septic type persisted from the beginning and in the fourth week the high rises and sudden falls and the rigors and sweats suggested either malarial fever or pyæmia. The former was disproved by blood examination and there was no reason to suppose that true pyæmia was ever present. The abdominal symptoms were less marked than usually occurs in a case of such severity. It is true gurgling in the right iliac fossa was marked from the first but the abdomen was never more than slightly full and the spleen was not enlarged at any time. The tongue never became dry and sordes never formed. The case was a sporadic one; there was no enteric fever at Lucknow, and 25 days had elapsed since he left that station before the first symptom occurred. No case had ever occurred in Goona in the memory of anyone. He may have picked up the infection from a railway refreshment room *en route*.

The condition of the blood.—In true enteric fever the following changes are well recognised. 1. The red corpuscles are progressively reduced in number until when convalescence is established and post-typhoid anæmia is present the number may have sunk to half the normal. This, as Hayem has pointed out,[3] may be modified at any time in the course of the disease by watery discharges acting by thickening the blood and producing a spurious polycythæmia. 2. The white corpuscles are unaffected or more often reduced in number. A marked hypo-leucocytosis is frequent but a true leucocytosis is said by some (von Limbeck and others) to supervene with the advent of certain complications, an observation, however, denied by many. I have examined several cases presenting complications, such as pneumonia, cystitis, and laryngitis and periostitis, and in none of these was there leucocytosis. Many of the complications of typhoid fever are due to the typhoid bacillus, but some are complicated by the occurrence of the common organisms of suppuration; this is the probable cause of the discrepancy. The complications caused by the pure typhoid bacillus show no leucocytosis but with the advent of cocci comes a rise in the leucocyte rate. As the disease progresses the polynuclear leucocytes diminish in greater ratio than the mononuclear, till late in the disease the latter exceed the former. In the case under observation the general characters are those of true enteric fever, but the leucocyte count was higher than is usual in enteric fever. This suggests, like the temperature chart, a septic element or at any rate a mixed typhoid infection.

The red blood corpuscles were never much reduced and on April 10th the anomaly of a polycythæmia in an obviously anæmic patient was seen. The condition of his mucous membrane suggested a moderate though marked degree of anæmia and yet three successive blood counts gave an average of over 5,000 000 per cubic millimetre. It is a good instance of the disturbance of the other element in the blood count, the degree of plasmo dilution, an element too frequently overlooked in making a decision on blood count. The large mononuclear leucocytes were somewhat high until convalescence. This is a very important factor in the diagnosis of malarial fever, as Christophers and Stevens showed, but in such cases the percentage is generally 16, 20 or more. The great increase of eosinophile cells in the latter examination is a very curious feature and the most obvious suggestion that it was caused by worm parasites was disproved. I saw a case of Kanthack's which showed 62 per cent. of eosinophile cells in the circulating blood of a man with general pemphigus. This increase has been noticed since in similar cases and the bases of pemphigus blebs will generally be found paved with eosinophile cells. In the subcutaneous tissues of the gut in acute dysentery I have noticed masses of the same cells and in the blood of patients with scarlet fever and mania. The phenomenon is generally stated to be marked in cases of asthma. In two cases seen by me during the last month, one, a case of limited pemphigus, showed 43 per cent. of eosinophile cells, and the second, an inflammatory condition of the calf of the leg around an encysted guinea-worm, the percentage of these cells was 35.

An interesting feature common to all these conditions is the involvement of extensive areas of subepithelial connective tissue (many intestinal worms, especially ankylostomata, produce this change), and Kanthack and Hardy were of opinion that eosinophile cells were derived from the body connective tissue. The relation between these two conditions, though purely hypothetical, is suggestive. The total evidence of the blood state was that the disease was enteric fever or something very like it.

Widal's test.—The absence of this reaction with three distinct strains of the Eberth bacillus may be said to prove that in the case in question the *causa causans* was not the Eberth-Gaffky bacillus but some other. A positive reaction would, indeed, have had less value, for even if the Eberth bacillus were playing a subsidiary part in the infection then a positive reaction would have been present but the total absence of any agglutination is strong evidence of the total absence of the usual bacillus of enteric fever. The blood was sent for examination with the Gärtner bacillus and the bacillus coli but, as before stated, it met with an accident. Of the great value of the Widal-Grünbaum reaction there is no question but it is certain that it is not so immaculate as its devisers first claimed. "This is enforced by the fact, which appears to be established by Jürgens Brion and Altschüler and Stern in their studies of the agglutination curves during the course of the disease, that maximum agglutination value may be given by the serum with bacilli which were shown to have no etiological relation to the illness and, further, that the specific agglutination value is not invariably above that of the group agglutination, which, indeed, cuts at the root of the *rationale* of the differentiation of paratyphoid and enteric fevers."[4] If this were generally the case then the possibility of separating the various members of the typhoid-Gärtner-coli family would cease but, speaking generally, it is possible to come to an accurate conclusion by the reaction of the various members in increasing degrees of dilution.

That organism which continues to be agglutinated by the serum in highest degrees of dilution is almost certainly that most intimately connected with the disease produced. Thus the writer in the same report says:[5] "The weight of evidence, which is abundant and daily accumulating, goes to show that while paratyphoid serum will often agglutinate bacillus typhosus it always acts upon the paratyphoid bacillus which is in causal connexion with the attack in very much higher dilutions. ..... The pathological results of infection are as a rule conformable to the clinical effects—that is to say, the picture may frequently stand for an ordinary case of true enteric but as a rule there are modifications due to the absence of one or other typical feature of the latter." Again, Major W. H. Horrocks[6] writes: "Schottmüller has described a number of cases of 'paratyphus.' The symptoms re-embled very closely those seen in true cases of enteric fever. The temperature charts were so characteristic that the diagnosis of enteric fever seemed almost beyond cavil. Rose spots enlargement of the spleen, and diarrhœa were also observed in some of the cases but in others the abdominal symptoms were not so marked. ..... When tested with the serum from an undoubted case of enteric fever the bacilli showed no traces of agglutination but when tested with serum collected from each of the cases all the bacilli became agglutinated. The reaction was observed not only with the bacilli and serum from the same case but also between the bacilli and sera of all the cases. The effective dilutions of the sera varied from 1–100 to 1–10,000. ..... The bacteriological results obtained seem to prove conclusively that the cases of 'paratyphus' were caused by a variety of the bacillus of Gärtner."

Dr. R. Tanner Hewlett, in an article in the *Journal of State Medicine* for November, 1903, describes some cases where the symptoms clinically were those of true enteric fever but where the serum failed to agglutinate cultures of the typhoid bacillus. Several of these were found to be associated with the bacillus enteritidis or Gärtner group and in several cases this bacillus was cultivated in a pure state from the body and the serum had high agglutinating powers on the same organisms. More conclusive proof still is afforded by an interesting and valuable paper by Dr. R. Row of the Petit Laboratory, Bombay, entitled "Obscure Irregular Continued Fevers of the Typhoid Group and their Probable Relation with Different Species of Bacilli of the Typho-Coli Race, as seen from the Specific Bacteriolytic Value of Blood Serums of such Cases on various Members of the Typho-Coli Group of

[3] Johns Hopkins Hospital Reports, vol. iv.

[4] Annual Report of the Sanitary Commissioner with the Government of India for 1903, p. 20.

[5] Ibid., p. 19.

[6] Bacteriological Examination of Water, 1901, Churchill.

Microbe." The method which this observer adopted was as follows. Equal parts of the fresh serum of the patient under examination and of young typhoid, coli, or Gärtner cultures were put up in the form of hanging drops under aseptic conditions. These were examined as fresh specimens and subsequently at determined intervals were removed, dried, and stained in the usual way. Others were allowed to stand for 24 hours and subsequently inoculated on to agar and the degree of growth noted. In all, records of 24 cases are given and the majority of these were examined with the three types of organism above mentioned. As a result, all degrees of reaction were demonstrated; some serums reacted to all three organisms well, more reacted to one intensely and the other two feebly, and some reacted to one strain only and not to either of the others—i.e., suggested pure infection. If such a deduction is justifiable it shows that in almost all the cases brought forward there was mixed infection; some cases of typhoid fever were caused by the Eberth bacillus, some cases of typhoid fever were caused either by the Gärtner bacillus or by the bacillus coli, and more were associated with both or all three bacilli.

The reactions produced *in vitro* in the above experiments were one or other of the following: (1) complete bacteriolysis; (2) partial bacteriolysis; (3) definite agglutination (produced by agglutin already present in the serum or subsequently produced *in vitro* by the leucocytes, some of which are accidentally carried into the serum); (4) indefinite agglutination; and (5) a negative reaction.

Without going into further details Dr. Row's conclusions are as follows (some of lesser importance are omitted): 1. The blood serum of patients suffering from continued fevers under consideration acts powerfully on the bacilli of typho-coli race and the serum reaction appears to be specific towards one or other members of the group. 2. The reaction ..... is of a lysogenic nature. 3. Whilst some of the serum reactions are referable to a pure bacillus typhosus infection a good number of them point to infection by organisms other than the bacillus typhosus—viz., bacillus enteritidis Gärtner and bacillus coli communis. 4. Shows that the reaction is sometimes pure but at others is focal for one organism and more diffused for the other members of the group. 5. The effort of nature in producing anti-bodies specialises as the case progresses, the earlier process being a sort of general reaction. 6. Relapse in enteric fever proper may be caused by coli infection superimposed on true typhoid fever. 7. Pure bacillus coli infection seems to be the most common cause of atypical and irregular fevers dealt with here. However, it is not unusual to meet with infection by bacillus enteritidis Gärtner, or mixed infection of two or more groups of organisms of this class. He concludes as follows. 8. These considerations seem to support my previous observation on the close relationship of the different members of the typho-coli race—the products of this group of organisms (as I then experimentally proved) when administered intravenously into rabbits inducing a train of closely allied symptoms and also marked intestinal lesions of a similar nature.

Paratyphoid fever in India.—Attention of medical officers in India is drawn to this subject in the Sanitary Commissioner's blue-book for the year 1902 above mentioned but in the article no special reference to the disease in India is made. In the same blue-book for 1903 an excellent *résumé* is given of the subject but again no special mention of the Indian atypical typhoid cases is made. At the same time it will probably be found that these irregular manifestations are particularly common in India, at any rate as compared with England. My personal experiences with clinical enteric fever in England and the Widal reaction showed a failure of less than 4 per cent. and if allowance be made for personal and technical failures it is still less. The 24 cases collected by Dr. Row, the experiences of Lieutenant-Colonel D. B. Spencer, I.M.S. (to be hereafter related), my present case, and others go to show that paratyphoid fever is quite common in India. It is very desirable to know to what extent it really occurs and it is only by careful observation of individual cases and repeated Widal examinations that the condition can be detected. The evidence of post-mortem examinations cannot be over-rated and it is possible that the type, position, distribution, or character of the intestinal ulceration may be different. From time to time puzzling accounts have been published where cases clinically diagnosed as enteric fever and giving Widal reaction were found at the post-mortem examination to present no intestinal ulceration. These may have been cases of paratyphoid fever, for admittedly the abdominal signs in such are usually less than in true enteric fever and presumably, therefore, the ulcers were also less severe.

A very tempting subject is that of the resemblance between enteric fever, paratyphoid fever, and dysentery, and the affinities between the Eberth-Gaffky bacillus, the coli communis bacillus, and Shiga's bacillus of dysentery. It might be shown that there is a suggestive gradation between the types, not only in their clinical manifestations, the site and type of the intestinal ulceration, and the degree of septicity of the fever, and so on, but more markedly in the biological gradation from the bacillus at one end of the arc to that at the other end, but the subject is scarcely ripe for discussion and it only needs to be borne in mind in order to show the importance, difficulty, and complexity of the whole question.

In the *Indian Medical Gazette* for April, 1900, there appears a paper entitled Enteric Fever in India, by Lieutenant-Colonel (then Major) Spencer, I.M.S. This appears to be the first paper definitely calling attention to the question of atypical typhoid fever in India and in it Lieutenant-Colonel Spencer challenges the unity of enteric fever. To the paper Dr. Row from the bacteriological side makes a fitting pendant and practically proves the whole question. Lieutenant-Colonel Spencer's paper is a long one and it is sufficient to refer briefly to a few of his most important points. He notes: (1) the clinical differences (*vide* table); (2) the rarity with which the typhoid bacillus is ever detected in food or water and its frequent absence in fæces or internal organs of those cases examined with this view (in India); (3) irregularity of the Widal reaction; and (4) that though for years the greatest care has been taken to prevent dissemination of infection in Indian cantonments yet enteric fever continues to be frequent. Many Indian cantonments are models of scientific sanitation but enteric fever seems to be almost unaffected.

* TABLE I.—*True Enterica.*

Etiology.	Widal test.	Mode of incidence.	Mortality per cent.	Chart.	Rash.	Typhoid state.	Abdominal symptoms.	Post-mortem appearances.	Duration of fever.	Treatment.
Bacillus typhi (Eberth) associated with sewage contamination of food or drink.	Positive reaction with the bacillus typhi.	Usually in epidemic form.	7·14 per cent. Maidstone epidemic (Poole).	Often typical; first week, gradual rise; second week, high continued fever; third week, gradual defervescence.	Generally present. 88 per cent. in Maidstone epidemic (Poole).	Early and pronounced.	Whether early or late they are unmistakeable.	Typical ulceration of glandular structures of small intestine.	Generally three weeks.	Expectant.

TABLE II.—*Indian Enterica (a Fever with Enteric Symptoms).*

Probably the bacillus coli associated with fermentation and putrefaction of intestinal contents and consequent auto-infection.	Negative.	Usually sporadic.	About 25 per cent. in India.	Generally irregular.	Generally absent.	Often vague or altogether absent.	Often absent.	Often the ulceration is irregular and extensive, being unconfined to glandular structures.	Three or four weeks but can be aborted by a special treatment.	The treatment I adopt is eliminative, combined with intestinal antisepsis and irrigation.

* Lieutenant Colonel Spencer's chart from the Indian Medical Gazette for April, 1900 (by permission).

After showing the ubiquity of the bacillus coli communis as an intestinal saprophyte, I must state my firm belief in auto-intoxication by that organism and explain the whole question by reference to certain unknown conditions of lowered body resistance culminating in what amounts to transmutation of a saprophyte into a parasite. Ptomaine poisoning may be regarded as an evidence of a similar process and therefore allied to a typical typhoid or paratyphoid fever, as may be seen from Lieutenant-Colonel Spencer's interesting comparative charts. In a private communication Lieutenant-Colonel Spencer points out that he uses an "abortive treatment" in these cases which consists in frequent flushing of the colon by large enemata of Condy's fluid and the administration of sulphate of quinine and sodium salicylate in alternate doses. He writes: "By this means I have never failed to bring the case to a favourable termination by the end of the second week." I have for several years been an advocate of colic lavage (izal) in dysenteric conditions[7] but where the ulceration is above the ileo-cæcal valve this treatment would appear to be of little value.

Granting, then, that paratyphoid fever exists and that in India it appears to be commoner than in England one or two important questions arise which certainly cannot be answered at present. Is there, after all, a transmutation of different species of bacilli as was once claimed in the case of the bacillus anthracis and the hay bacillus? How does the bacillus coli communis attain its power of changing its saprophytic habits for parasitic ones? Is it as a result of lowered resistance of its host or certain unknown changes in man which allow auto-infection or is the power gained by the bacillus in its extra corporeal existence? The conditions of life vary so much in the tropics from those of the temperate zone that it is idle to seize upon one factor. Nevertheless, one may suggest the frequency with which human fæces pass through the bodies of other animals as a possible cause.

In England none of the higher animals feed on human excrement, but in India there are many—thus the pig, the dog, and certain carrion birds do so habitually—i.e., it is their staple article of food. Hares, partridges, peafowl, cattle, and buffaloes are very frequently foul feeders and any or all these latter are eaten by man or in the case of cattle their milk is consumed. It is a matter of common knowledge that many organisms undergo an exaltation in virulence by being passed through the bodies of animals and it is possible that in this way increased potentialities for evil are acquired by the typho-coli group. Enough has been written to show that another problem enters into Indian sanitation, the origin of paratyphoid variations. Are we, therefore, to go on looking upon the bacillus coli communis and its congeners as harmless organisms to be tolerated in pure water? Will it be necessary to inoculate our Indian drafts of soldiers with a polyvalent antityphoid vaccine like that being made polyvalent for the various micrococci of disease? Whatever answers will in the near future be given to these questions, one thing stands certain—the unity of typhoid fever can no longer be upheld.

My thanks are due to Dr. Row of Bombay for a demonstration of his specimens, methods, and literature, and to Lieutenant-Colonel Spencer for much help and the use of his published articles.

Bombay.

INFECTIVE PURPURA.

BY S. ROBERT SCHOFIELD, M.B. LOND., M.R.C.S. ENG.

SEVERAL considerations have prompted me to place the following case of purpura on record. The remarkable features and the extreme gravity of the condition from which recovery eventually took place are in themselves sufficient justification for this, especially as reference to the literature on the subject shows our present knowledge to be very imperfect. Furthermore, I am anxious to call attention to the beneficial influence which the prolonged administration of quinine exerted on the clinical course of the illness, for in regard to treatment also literature leaves much to be desired. The following is a short account of the case.

The patient, a married woman, aged 34 years, had been in a poor state of health for several months, but had had no definite illness until about 36 hours before my first visit. The symptoms complained of were severe frontal headache and pains in the back and limbs. It was evening when she was first seen and the temperature was 104° F. and the pulse was 124. A few small petechial extravasations were noticed and these were confined to the areas just above and below the knees. Six grains of salicylate of quinine and 15 grains of phenacetin divided into three cachets were given during the night with the result that the pains were eased and a rapid fall of temperature ensued, but this was accompanied by extreme restlessness and frequent attacks of vomiting. On the following morning the temperature was found to be subnormal but the pulse was still rapid (120). The signs of purpura were much more obvious and the area invaded became gradually extended until the following day when the limit appeared to be reached. The purpuric patches varied in size, the largest being situated in front of the knees and about three and a half inches in diameter. There were large patches in the skin over each elbow, on the dorsal surface of the hands and of the joints of all the fingers but not the thumbs. The feet were similarly affected but to a lesser extent, the skin over the malleoli and the metacarpo-phalangeal joint of the great toes showing the largest patches. Similar extravasations were also noticed behind the spines of the scapulæ and on the lower part of the back. There were numerous smaller patches on the dorsal surface of the limbs, the largest of these being nearest to the elbows and knees. The distribution suggested that the amount of extravasation was greater in the area of skin stretched over bony prominences and was promoted by the retarded circulation in these parts. The mucous membrane was not affected so seriously as the skin. There was slight hæmorrhage from the mouth; and the surface of the lips, mouth, and tongue was covered with a yellowish white slough and the mucous membrane of the nostrils and conjunctivæ was similarly affected. There was also a slight bloodstained discharge from the other mucous membranes, but during the whole course of the illness there did not appear to be any sign of internal hæmorrhage and the retina was also quite free. The area of the various patches had reached its maximum within 36 hours of the first appearance of purpura and no further extravasations took place. The urine was examined at this stage and was found to contain albumin—about one-sixth. The patient continued to be very restless and collapsed and could not be induced to take even liquid food by the mouth. Rectal feeding was employed and to the nutrient enemata salicylate of quinine and brandy were added. The restlessness continued and it was only after successive doses of opium—trional and ammonium bromide having been found useless—that any sleep was obtained. About the fifth day the mucous membranes of the mouth, tongue, and nostrils began to slough and repiration was greatly impeded. The nose and throat were frequently washed with boric lotion by means of a nasal douche and the fauces were painted with glycerine of borax. In the course of a few days necrotic patches of mucous membrane began to separate but there was no deep sloughing of these parts. The purpuric patches scattered over the trunk and limbs pursued the following course. The superficial layer of the skin became dry and the margin raised by an exudation at first serous and then purulent. In the smaller patches the skin could be peeled off in course of time, leaving a slightly pigmented surface. In the case of the larger patches, on the removal of the skin a smooth surface, dark brown in colour, was exposed. At first this was quite dry but soon pus began to exude round the edges and when this necrotic portion became separated the tissue beneath was that of a sloughing sore. The depth of each slough varied directly with the size of the original patch. Thus, in the case of the elbows and knees the periosteum was exposed to a considerable extent, and on the dorsum of the hand the sheaths of the extensor tendons were clearly visible. The back of each hand was practically one large slough. The inner surface of the great toes showed a similar condition. When the disease had lasted for about a month these sloughing surfaces were at their worst. They became gradually more healthy and began to granulate, and at the end of three months they were all soundly healed. During the period when the sloughing was very extensive—for

[7] Vide the Special Dysentery Number of the Indian Medical Gazette, July, 1905.

about six weeks—the general condition of the patient continued to be very serious. The temperature was irregular, varying from 101° to 104°. There were frequent rigors, sometimes as many as three in the course of 24 hours. Towards the end of the second week the left ventricle became dilated, the apex beat being at one period an inch outside the nipple line. There was a well-marked systolic murmur, but the second sound remained clear. The albumin gradually disappeared from the urine and there was no trace of this after the first month. At the end of the sixth week the left leg became swollen and painful; this was evidently due to thrombosis. About this time there were signs of general improvement and the temperature gradually came down to normal. The pulse improved in quality and the left ventricle gained tone and the murmurs eventually disappeared. Three months after the onset the patient began to sit up in bed and a month later she was able to journey to the seaside. On her return six months later it was obvious that she had made an excellent recovery. She had gained greatly in weight and by the aid of massage and passive movements had recovered the full use of her limbs except that she could not completely close her hands owing to the contraction of the scars. This condition is now gradually improving.

Of the various forms of purpura that are described the case under consideration evidently belongs to the "infective" variety. The whole course of the illness and the behaviour of the purpuric areas admit of no other explanation as at all probable. What was the actual source of the infection it is impossible to say, for although the early symptoms suggested influenza there was no confirmatory evidence that this was the case. As no other source of infection could be determined the precise cause of the patient's illness must remain in doubt. There were times when her condition was desperate—indeed, wellnigh hopeless—as may be gathered from the above account and the satisfactory termination of so grave an illness may, I think, be mainly ascribed to the influence of quinine. As mentioned above, the first drug employed was the salicylate of quinine. Two grains of this were given every four hours for the first ten days but with no obvious result. After this salicylate of soda was tried and then perchloride of iron, but these proved even less useful. During the third week, at the suggestion of Dr. H. P. Hawkins, who saw the patient in consultation with me, intramuscular injections of carbolic acid were employed. Five minims of a 5 per cent. solution were injected daily for six days. The object of this treatment was to stop the frequent rigors but there was no obvious effect on the course of the illness. Had this form of treatment been instituted at an earlier stage of the disease a better result might have followed. At the end of the third week sulphate of quinine was prescribed. The dose was rapidly increased to four grains and this was given in an effervescing mixture every four hours. The drug was well tolerated by the patient and she continued to take 24 grains a day until the temperature had been normal for a fortnight, when the quinine was gradually discontinued. Under the influence of this treatment the rigors became less frequent and the general condition was much improved. In addition to the quinine, the other drugs employed were digitalis and strychnine; and, finally, iron, arsenic, and strychnine were given in combination in the form of a capsule.

The local treatment was naturally a matter of great importance, for there was much fear of septic absorption from the sloughing wounds. Frequent application of hot boric fomentations was first adopted but this plan of treatment had to be abandoned owing to the exhaustion caused by the constant disturbance of the patient. Antiphlogistine was substituted for the fomentations with marked advantage. This allowed the sloughs to be dressed only once a day and much exhaustion was thus avoided. Moreover, under the influence of this preparation the sloughing surfaces rapidly improved, the discharge from them became less offensive, and healthy granulations soon appeared, with the result that the wounds healed in the satisfactory way which has been described.

In conclusion, I wish to acknowledge my indebtedness to Dr. J. S. Risien Russell, who saw the patient on two occasions during the first week of her illness and who has kindly assisted me in the arrangement of these few notes of the case.

West Kensington, W.

40 CONSECUTIVE CASES OF FRACTURE OF THE PATELLA TREATED BY WIRING.

BY C. MANSELL MOULLIN, M.A., M.D. OXON., F.R.C.S. ENG.,

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IN the last 11 years I have had under my care 40 cases of fracture of the patella which I have treated by some method of wiring. For the first year or two, until I felt certain that there would not be any ill result, I adopted this method of treatment only in the case of young adults who were of sound constitution and to whom a good union was of great importance. Fractures in older and feebler patients were treated by splints in the old-fashioned way with the usual results. For the last eight years I have used the method of wiring in every case of this description that has come under my care, with one exception, no matter what was the size of the fragments, or whether they were comminuted, or whether the patients appeared to be on the verge of delirium tremens. The one exception was a case of re-fracture in an enormously stout woman in whom no operation of any kind was advisable.

In the first 28 cases I tried most of the various methods of subcutaneous wiring that have been recommended from time to time. All of these, with the exception of Barker's, were soon dismissed as unsatisfactory. Barker's method, which consists in passing a wire vertically around both fragments, through the ligamentum patellæ below and the tendon of the quadriceps above, and twisting the ends together on the cutaneous surface, I practised until five years ago with what appeared to be a good result. In several instances I thought I had secured bony union. In most the union, if fibrous, appeared to be so strong that it was not likely to yield. Only one or two were plainly bad. But when I began to make use of the Roentgen rays as a matter of routine, examining with them all fractures alike, it soon became evident that this method was not much better than the others. Even with the greatest care, making my assistant rub the two fragments together while I tightened the wire so as to insure their being in contact, the apposition was far from being what it ought to be. If the posterior edges of the broken surfaces were in contact the anterior never were and the gap between them was far wider than could be accounted for by the interposition of shreds of pre-patellar fascia. The fragments were tilted and manipulation did not prevent them from becoming tilted as the wire was tightened. The tilting could be diminished by the direct downward pressure of a firm pad upon the cutaneous surface, but this pressed the fascia down between the fragments and rendered bony union out of the question.

The last 12 cases I have treated by the open method with, I believe, bony union in all but one, in which the tilting was not sufficiently corrected, and certainly with an enormous saving of time and inconvenience to the patient. The plan adopted has been the same in all. Operation is performed on the third or fourth day after the accident when the patient has become more or less reconciled to bed and the swelling of the joint has ceased to increase. A semicircular flap is raised from over the fragments and all the blood clot is carefully turned out. Each fragment is drilled in such a way that the wire does not project through the cartilaginous surfaces. A single stout silver wire is passed through and the ends are twisted together until the fragments are in exact apposition, cut short, and buried. No carbolic acid or other antiseptic is allowed to touch the interior of the joint. There is no occasion to wash it out, as the blood, being all coagulated, can be removed with ease by means of a scoop and forceps. The torn fascia on the cutaneous surface of the patella is then united with catgut and one or two catgut sutures are used to join together the aponeurosis on either side if it has been extensively lacerated. No drain is inserted but the angle of the cutaneous incision is left a little open in case there should be any oozing. No splint is used. Deep and superficial dressings are applied and the knee is firmly bandaged. On the third or fourth day the bandages and the superficial dressings are removed and are replaced by a lighter bandage, and the patient is encouraged to flex and to extend the limb

more and more each day until by the end of the fortnight it can be bent to a right angle. Massage is begun as soon as the wound is healed. The patient is allowed to get up before the end of the third week and by the end of the fourth he is able to walk without a limp and to kick. In one instance bicycle riding was resumed before five weeks had elapsed from the date of the accident without any ill result.

In none of the 40 cases has there been a rise of temperature worth mentioning and not one of them has caused me a moment's anxiety. The 12 patients whom I have been able to trace can walk perfectly well and can kneel. One or two of them are conscious of the presence of the wire when they kneel and reach forward but it does not give them sufficient inconvenience to render removal advisable. There is no doubt that when this method of treatment is carried out under proper precautions the result is infinitely better than is that attained by any other method and that there is an enormous saving of time and inconvenience to the patient. Of course unless those precautions can be carried out with absolute thoroughness it should never be attempted.

During the same period I have met with two instances in which the ligamentum patellæ had been torn off from the tubercle. Both were in young subjects and in both the ligament had become curled up under the patella so that union could not have taken place without an operation. The ligament in each case was withdrawn from the recess in which it lay and was fastened to its insertion by silk sutures. Both patients did well.

Wimpole-street, W.

A CASE OF ACUTE TETANUS TREATED WITH INTRACEREBRAL INJECTIONS OF ANTITOXIN.

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THE following case may, I think, be of interest.

The patient, a man, aged 30 years, came to me on March 26th, 1905, suffering from a suppurating wound on the back of the left hand which had been caused on the previous evening by a dirty piece of galvanised iron. It was treated with hot carbolic fomentations. On the following day there was some lymphangitis up the arm which subsided under treatment in a few hours. On the morning of the 28th the wound looked cleaner, was less painful, and the tenderness of the axillary glands had gone. At about 2 P.M. the patient was suddenly seized with a severe shivering attack, followed by violent headache and vomiting. At 7 P.M. he came to see me, complaining of feeling very ill; his face was pale with an anxious expression; the headache was very severe, and he complained of pain and stiffness in the muscles at the back of his neck. The temperature was 96·8°F. and the pulse was 64. I sent him into the Chelmsford Infirmary and saw him again at 8.30 P.M. Feeling convinced that it was a case of commencing tetanus we resolved to give him an intracerebral injection of antitoxin. While being prepared for operation he had two spasms, the second more severe than the first, both of them affecting the muscles at the back of the neck and the second one being accompanied by considerable retraction of the head. He was taken into the theatre directly after the second one and I injected 10 cubic centimetres of serum into the second anterior frontal convolution on each side and 10 cubic centimetres into the skin over the abdomen. He was put back in bed and 30 grains of chloral hydrate were administered per rectum and this was repeated every four hours. On the 29th, at 9 A.M., I ascertained that the patient had slept for short periods during the night. The headache was still severe but there was less pain in the back of the neck; he had had no more spasms. The temperature was 100° and the pulse was 70. 20 cubic centimetres of serum were injected into the left forearm. At 6 P.M. I injected 20 cubic centimetres of serum into the left axilla and 10 cubic centimetres into the skin over the abdomen. On the 30th, when seen at 9 A.M., the patient was decidedly better, the stiffness and pain in the neck were nearly gone, and he only complained of slight headache. The temperature was 99·4° and the pulse was 74. A total of 30 cubic centimetres of serum were injected into three different places in the left arm. At 6 P.M. the patient expressed himself as feeling quite well except for slight headache. 20 cubic centimetres of serum were injected into the skin over the abdomen. After this progress was uneventful; as no more spasms occurred I administered no more serum and omitted the chloral. The patient was kept under observation till April 15th, when he left the infirmary quite well.

The points worthy of notice in this case are, I think, the following: (1) that it was an acute case, the first symptoms developing about 90 hours after the injury; (2) the symptoms which manifested themselves before the spasms commenced; and (3) the early resort to serum. With regard to the second point this is the third case of tetanus which I have met with in my practice in the last seven years and in which I have had the opportunity of watching the development, and in each I have been struck with the occurrence of the same symptoms—viz., severe headache and vomiting, the pain and stiffness in the muscles at the back of the neck, the anxious aspect, and the appearance of being more ill than the immediate circumstances seemed to warrant. In one of the previous cases a subnormal temperature was registered. With regard to the third point, one of my previous cases had been treated unsuccessfully with intracerebral injections but they had not been used till the spasms had become well established; hence my object was to get those parts, probably the ganglion cells of the cerebral nervous system, which the tetano-toxin affects immunised before the toxin had effected any great damage and in this I venture to hope that I was successful. In giving so many of the subcutaneous injections into the arm I hoped that possibly the toxins on their way to the cerebral nervous system might be neutralised before having reached it.

Chelmsford.

SOME RECENT DEVELOPMENTS IN THE SURGICAL TREATMENT OF STRABISMUS.

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THE surgical treatment of strabismus dates from the earlier half of the nineteenth century when a German surgeon, Stromeyer,[1] divided the recti muscles on the cadaver, and pointed out that squint might be corrected in that way. Pauli[2] first attempted to perform the operation, which later was actually carried out successfully by Cunier and by Dieffenbach.[3] It is of some historical interest to recall the fact that Cunier performed his first operation on Oct. 20th, 1839, exactly six days before Dieffenbach operated. The first surgeon to perform the operation in England appears to have been P. B. Lucas,[4] who in 1840 published a treatise upon the subject. He devised a blunt hook not very dissimilar from the one now always employed in the operation of tenotomy. At first the rectus was exposed by means of a vertical incision through the ocular conjunctiva midway between the edge of the cornea and the caruncula lacrymalis, and a blunt hook being passed under the muscle, the latter was divided with scissors on the nasal side of the hook. As originally practised, therefore, the operation was a myotomy as opposed to a tenotomy. It was believed that the two ends of the divided muscle would eventually become united by means of cicatricial tissue and it was thought that in this way the ultimate result of myotomy would be to elongate the rectus. But it was soon shown that, in point of fact, the two parts of the muscle did not unite with one another. It is not a little curious, as readers will perceive later, that one is

[1] Stromeyer: Beiträge zur Operativen Orthopädik, 1838.
[2] Pauli: Monatschrift für Medicin, Augenheilkunde, und Chirurgie, 1840, p. 321.
[3] Dieffenbach: Ueber das Schielen und die Heilung desselben durch die Operation, Berlin, 1842.
[4] Lucas: A Practical Treatise on the Cure of Strabismus or Squint by Operation, &c., London, 1840.

to-day engaged in realising an end almost identical with that aimed at by the earlier operators—namely, an actual elongation of the muscle.

The researches of Bonnet (1841) into the anatomy of the capsule of Tenon appear to have led von Graefe to advocate tenotomy in preference to division of the muscle. Since that time the operation has undergone few modifications and has retained its place in the mind of the medical profession as the operation *par excellence* for the cure of squint. In the hands of British operators, at all events, the so-called "open" operation was largely superseded by the introduction by Critchett of the "subconjunctival method." In this operation, as everybody knows, the tendon is not exposed but divided beneath the ocular conjunctiva by scissors introduced through an incision in the neighbourhood of the lower border of the tendon, close to its insertion into the sclera. This method of operating is still the favourite one in England, although elsewhere it seems to enjoy little favour. Indeed, even among British surgeons there is nowadays some tendency to revert to the less elegant but more certain plan of dividing the tendon openly.

During the last two decades, however, surgeons have become painfully conscious of the fact that tenotomy, although easy to perform, is uncertain in its results. The fibrous bands—the so-called "check ligaments"—which unite the sheath of the muscle with the capsule of Tenon may limit the due retraction of the tendon which it is the aim of the operation to produce. The result in this event is disappointing. On the other hand, if the ligaments be freely divided a divergent squint may readily result, especially when both eyes have been treated surgically. In tenotomy the surgeon accordingly lies between the Scylla of doing too little and the Charybdis of doing too much, and that without being in a position to prevent either mishap with certainty.

Endeavours have on this account been made to render the effects of tenotomy more certain by modifications of several kinds or by replacing it by operations of a somewhat different nature. For example, Parinaud[5] (1890) proposed in some circumstances to replace tenotomy by an operation to which he has given the name of *recullement capsulaire*. This operation consists essentially in separating the muscle from its adhesions to the capsule of Tenon and to other parts, without, however, dividing the tendon itself. A vertical incision, made between the tendinous insertion and the caruncle, allows a pair of scissors to be introduced for the purpose of separating all premuscular adhesions that can be reached. The final step is to suture the conjunctival wound in the usual way. Again, some few years ago Panas[6] (1896) advocated what he called "elongation of the ocular muscles" in pronounced non-paralytic deviation. This consisted in making successive and steady tractions upon the rectus muscle enveloped in Tenon's capsule by means of a large strabismus hook passed beneath its tendon until the inner border of the cornea could be brought without the least resistance to the canthus, inner or outer, as the case might be. The tendon was then divided and the conjunctival incision closed with a suture. Panas recommended the performance of his operation of muscle stretching upon both eyes at the same sitting. L. Webster Fox (1900),[7] after doing tenotomy of the external rectus for divergent squint, stretches and removes an elliptical fold of conjunctiva and Ténon's capsule from over the internal rectus and finally closes the wound thus left by four sutures.

Several operations have been devised with the object of shortening without actually dividing the antagonist muscle. The effect is produced by rucking or folding the tendon, often by means of special instruments, and then by fixing it in place by sutures (Todd, Valk, Brand, and others). In the same category may be placed the operation of myectomy devised by J. F. Noyes[8] in the year 1874. Noyes excised bodily a piece of the external rectus in cases of convergent squint and sutured the cut ends together For the cure of convergent strabismus Noyes usually combined this operation with tenotomy of the internal rectus.

The most important advance in the surgical treatment of squint lay, however, in the introduction of the operation of "advancement" first devised by Jules Guérin (1849) and since modified by many surgeons. Advancement consists in bringing forward the direct antagonist of the divided muscle to an attachment nearer the cornea, thereby increasing the power of the advanced muscle as regards rotation of the eyeball. With advancement a tenectomy of the muscle is often combined (Agnew). The result of this combined operation—that is to say, of tenotomy of one muscle together with tenectomy and advancement of the opponent muscle—is much more certain than that of tenotomy alone, and it can be graded with considerable accuracy by those who have acquired a moderate degree of proficiency in operations upon the muscles of the eye. Moreover, as the operation is nowadays often undertaken under cocaine, it is possible to judge by actual inspection whether a correct adjustment has been secured or whether too much or too little has been effected. When a general anæsthetic, as chloroform, is administered, it becomes more difficult to gauge the immediate result, because the patient can give no help in the matter and no dependence whatever can be placed upon the position assumed by the eyes when the patient is narcotised.

It has thus come about that few operators would now care to attempt to rectify a convergent squint, say, of 40 degrees angular measurement, by the operation of tenotomy alone. On the other hand, they would feel tolerably confident of a good result by combining with tenotomy of the one muscle advancement and shortening of the other, more especially if the operation was done under local anæsthesia.

A further development of the operation of advancement has consisted in advancing not only the tendon but also Tenon's capsule and the overlying conjunctiva. This is spoken of as "capsulo-muscular advancement" in order to distinguish it clearly from advancement of the tendon pure and simple. This excellent operation is capable of yielding a more marked effect than advancement of the muscle alone. Upon the whole, it appears to be the operation preferred by a majority of operators.

Some few years ago, realising the extremely uncertain effect of simple tenotomy, it occurred to me that a more strictly scientific proceeding would be to lengthen the tendon of the rectus muscle without at the same time interfering with its actual insertion into the sclerotic coat of the eyeball. In this way I hoped that the "dosage," so to speak, of tenotomy might be rendered more or less certain instead of being, as in the old operation, an almost unknown factor. My efforts were crowned with success. I described the method of operating, and exhibited several patients upon whom the operation had been performed, at the Ophthalmological Society of the United Kingdom in 1902.[9] Briefly, the steps of the operation were as follows. A vertical or curvilinear incision was made with scissors over the insertion of the internal rectus muscle and the latter was exposed as fully as might be, and carefully separated from the overlying conjunctiva by a few snips of the scissors. After a small squint hook had been passed beneath the tendon a fine well-boiled silk suture was inserted through the lower border of the tendon close to the sclera. The lengthening of the tendon without disturbing its insertion might be effected in several ways, of which the two most practical alone need be described (Figs. 1 to 4). 1. A long oblique incision is made with scissors, commencing near the lower border of the scleral insertion and terminating at the upper border of the muscle, some distance from its tendinous attachment to the eyeball (Fig. 1). The two ends of the tendon are then united by a couple of points of interrupted suture (Fig. 2). 2. The lower half of the tendon is cut through some little distance from the scleral insertion and the incision is carried along the centre of the tendon, midway between its upper and lower border, finally to be brought out at a right angle to its former course (Fig. 3). The free ends left by this step-like incision are united by sutures (Fig. 4).

The lengthening of the tendon as carried out by either of the foregoing methods should be directly proportionate to the linear measurement of the squint; in other words, in a strabismus of five millimetres an attempt to lengthen the tendon by just that amount should be made. The final step, after the tendon sutures have been tied and cut off short, is to close the conjunctival incision neatly with several points of interrupted suture. This is rendered

[5] Parinaud.
[6] Panas: Archives d'Ophtalmologie, Janvier, 1896.
[7] Fox: American Medical Association, June, 1900.
[8] Noyes: Transactions of the American Ophthalmological Society, 1874, p. 277.
[9] Stephenson: Transactions of the Ophthalmological Society, vol. xxii., 1902, p. 276.

easier if the conjunctival wound be kept stretched during the suturing by two small squint hooks, one inserted into its upper and the other into its lower angle. Before the incision into the tendon is made as much of the rectus as possible should be exposed. This may be accomplished by turning the eyeball in a direction opposite to that of the action of the muscle treated surgically and also by retracting the divided conjunctiva fully, for which purpose Prince's forceps (right or left, as the case may be) is a most convenient instrument. The operation of tendon lengthening

FIG. 1.

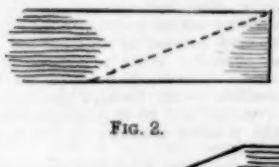


FIG. 2.

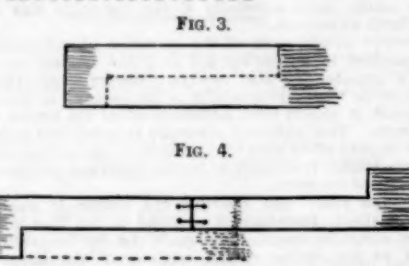
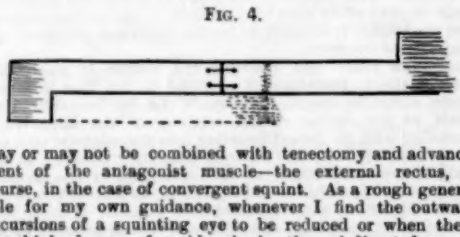


FIG. 3.

FIG. 4.



may or may not be combined with tenectomy and advancement of the antagonist muscle—the external rectus, of course, in the case of convergent squint. As a rough general rule for my own guidance, whenever I find the outward excursions of a squinting eye to be reduced or when there is a high degree of amblyopia in the misdirected eye I perform the combined operation. A squint of over 15 degrees angular measurement also furnishes another indication for the combined operation.

As a matter of experience I find it more satisfactory to undertake these operations upon the ocular muscles under cocaine (2 per cent.) or stovaine (5 per cent.) or eucaine lactate (2 per cent.) simply dropped into the conjunctival sac. The use of adrenalin hydrochloride (1 in 1000 or 1 in 2000) is a material help, inasmuch as it renders the intervention in many instances an almost bloodless one. In my opinion, it should be employed, indeed, whether a general anæsthetic is or is not given. It is worth noting that an agent has recently been placed at our disposal that acts even better in inducing local anæsthesia and hæmostasis than cocaine and adrenalin applied separately to the eye. The new combination has received the name of "eusemin" and consists of cocaine and adrenalin and chloretone dissolved in physiological salt solution. It is supplied in hermetically sealed tubes of amber glass, each containing three cubic centimetres. Eusemin has been used in ophthalmic surgery by Cohn.[10] Applied to the eye before and during the performance of the operation which it is the purpose of this communication to describe, eusemin renders the work at once simpler and more speedy. One last point—namely, the instruments used, as scissors, hooks, and fixation forceps, should be somewhat smaller than those generally employed in the usual operations for squint.

Mr. H. B. Grimsdale[11] fearing that my methods of tendon lengthening might interfere with the direction of the chief action of the muscle concerned, has suggested a method of overcoming the difficulty, which is, however, more apparent than real. A glance at Figs. 5 and 6 will show that Mr. Grimsdale divides the tendon into three parts and that he then stitches the upper and lower parts to the mesial slip.

FIG. 5.

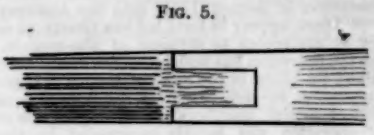
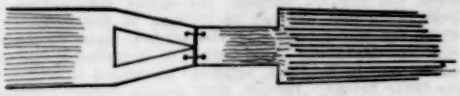
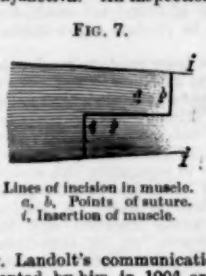


FIG. 6.



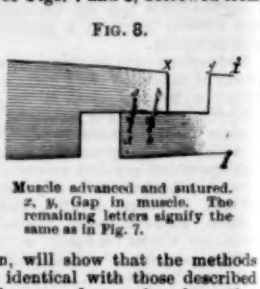
In December, 1904, Dr. E. Landolt[12] brought before the Academy of Medicine of Paris the operation of muscular elongation as a means of curing strabismus. It was described, in evident ignorance of my work in the same direction, as "a new operation upon the ocular muscles." Landolt had operated by these means in inveterate cases of convergent strabismus, concomitant or paralytic, in which marked contracture of the internal rectus was accompanied by changes in the structure of the muscle and by loss of its elasticity. Dr. Landolt described two ways of lengthening the muscle, previously exposed by a longitudinal incision through the conjunctiva. An inspection of Figs. 7 and 8, borrowed from

FIG. 7.



Lines of incision in muscle. *a*, *b*, Points of suture. *i*, Insertion of muscle.

FIG. 8.



Muscle advanced and sutured. *x*, *y*, Gap in muscle. The remaining letters signify the same as in Fig. 7.

Dr. Landolt's communication, will show that the methods adopted by him in 1904 are identical with those described by me in 1902. After the advocacy of muscular elongation by so distinguished an ophthalmic surgeon as Dr. Landolt it may be predicted that the operation will be widely performed, so that we shall soon be in possession of ample evidence as to its true utility and real status in the surgical treatment of strabismus. The operation, however, as I remarked in my orginal communication, is by no means easy to do. "It is, perhaps, too much to expect," I wrote, "that in the hands of most surgeons so difficult and delicate an operation as that described will replace the simple and often quite satisfactory tenotomy. I am convinced, at all events, that it is a more exact and scientific proceeding to lengthen a rectus tendon than to divide it. Certainly the results can be foreseen and graded with considerable accuracy and so much cannot candidly be claimed for tenotomy as commonly practised."

Verhoeff[13] has suggested an ingenious method of lengthening the tendon without dividing the latter or, indeed, of

FIG. 9.

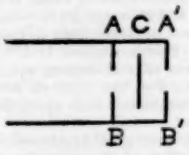
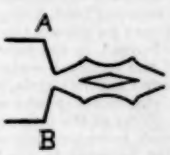


FIG. 10.



using any sutures. A glance at the accompanying figures (Figs. 9 and 10) will show how this is carried out by means

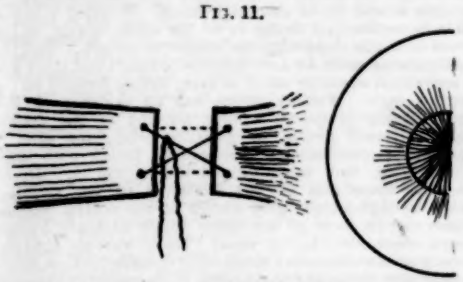
[10] Cohn: Wochenschrift für Therapie und Hygiene des Auges, Nov. 24th, 1904.
[11] Grimsdale: The Chief Operations of Ophthalmic Surgery, 1904, p. 9.
[12] Landolt: Archives d'Ophtalmologie, Janvier, 1905. THE LANCET, Jan. 28th, 1905, p. 254.
[13] Klinische Monatsblattes für Augenheilkunde, April, 1903.

of incisions (A, B, C, A′, B′). Verhoeff expressly states that no hyperphoria has ever resulted from the performance of his modified operation.

The technical difficulties of tendon lengthening as carried out upon the ocular muscles have led me to endeavour to find a simpler substitute. I have again borrowed a device adopted by orthopædic surgeons—viz., the so-called "artificial tendon." The plan was introduced in 1892 by Glück,[14] who employed bundles of silkworm gut to bridge over the gap left after the traumatic division of tendons. Jochner[15] some years later replaced a gap of two and a half inches in the extensor communis digitorum due to a sword wound with success. It has been shown by Kummell that in a case thus treated the sutures were eventually converted into fibrous tissue resembling tendon itself. Lange[16] has described no fewer than 56 cases of tendon transplantation in which the tendons were lengthened by a number of strong silk threads. His first attempts were made in the hopes of rendering children with extensor paralysis of the knee able to dispense with instrumental aid. Some of the artificial tendons were eight inches in length. Primary union was obtained in all Lange's cases, while in two instances alone was the functional result unsatisfactory. Lange had an opportunity of examining the anatomical condition in one of his operations performed two and a half years previously. He found the artificial tendon to be of firm consistence and as thick as a cedar pencil. When it was cut open the silk was seen to lie in its centre without alteration. The sheath consisted of fibrous tissue, of which the central portion had the structure of normal tendon, made up of parallel and longitudinal fasciculi.

The operation as applied to the internal rectus muscle is quite simple. The tendon is exposed as in the former case and two sterilised silk threads are passed through the tendon about three millimetres from its scleral insertion—one through the upper and the other through the lower border of the muscle. The threads are then knotted, one long end armed with a small curved needle being left attached to each. The tendon, thus securely held, is next divided vertically on the outer side of the knots—that is to say, about midway between the latter and the scleral insertion of the tendon. The threaded needles are then passed between the distal and the proximal portion of the divided tendon in such a way as to bridge over the gap left between the two. Lastly, the two sutures are tied together. An even simpler way of forming the artificial tendon is to use two needles on one length of silk. In Fig. 11 the sutures have

FIG. 11.



been passed crosswise and tied. If advancement of the antagonist muscle has formed part of the operation the sutures should not be adjusted until the first operation has been completed. If, on the contrary, muscular elongation is alone contemplated, then before the threads are tied the eyeball should be strongly abducted so as to leave a distinct interval before inserting the silk threads of the artificial tendon.

My experience with the "artificial tendon" is not as yet extensive, but satisfactory results have been obtained in the cases where it has been tried. One thing is clear—namely, that it is much easier to carry out than tendon-lengthening, properly so-called, and on that score alone it is likely to commend itself to the minds of practical ophthalmic surgeons.

Welbeck-street, W.

[14] The Practitioner, vol. lxix., 1902, p. 360 et seq.; and Modern Methods in the Surgery of Paralysis by A. H. Tubby and Robert Jones, London, 1903, p. 113, et seq.
[15] Ibid. [16] Ibid.

ON THE

ACTION OF VENOMS OF DIFFERENT SPECIES OF POISONOUS SNAKES ON THE NERVOUS SYSTEM.

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AND
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IV.—VENOM OF DABOIA RUSSELLII.

IN previous communications to THE LANCET[1] we described the histological appearances found in the nervous system in cases of intoxication with the venoms of two Indian species of snakes—namely, the cobra and the banded krait (bungarus fasciatus)—and in each instance we pointed out the connexion which exists between the degenerative changes found and the symptoms observed during life. Both these species belong to the same family of colubridæ—namely, elapinæ; further, the symptoms which follow an injection of either of these venoms point undoubtedly to an interference with the functioning of the nervous system. In the present communication we propose to take up a similar study made with the poison of one of the most deadly of the Indian viperidæ—namely, daboia Russellii. It is as well to state at the outset that the symptoms which follow an injection of this venom into the animal body are much more difficult of explanation than is the case with either of the venoms already considered. Thus, while the observations[2] which have already been made with daboia poison show that it has a marked action on the blood plasma, on the blood corpuscles, both red and white, on the endothelium of the capillary vessels, and on the cells of various organs, some experiments made by one of us along with Dr. Hanna[3] point to the conclusion that this venom is free from any element which acts directly on the central nervous system, similar to the principal toxic constituent of cobra poison. No direct evidence has, however, up to now been brought forward in support of this conclusion but we hope in the present communication to have something more to say on this point.

The experiments which were undertaken to study the symptoms of intoxication with daboia venom were made on various species of animals—pigeons, rats, rabbits, monkeys, donkeys, and horses. Injections of the poison were made both intravenously and subcutaneously. In this paper we propose to give only a short summary, as far as symptoms are concerned, of the observations made under these varying conditions. Detailed accounts[4] of such experiments have already been published by one of us.

Cases of intoxication with the venom of daboia Russellii may be divided into two classes. The first class is made up of those cases in which rapid death—that is to say, death within a few minutes—follows an intravenous injection of a small amount of venom, or, in the case of small animals, a subcutaneous injection of a comparatively large amount of poison. The symptoms in these cases begin almost immediately after the injection of the venom and soon end in death. They are restlessness and difficulty in preserving equilibrium, gasping and laboured respiration, followed by violent general convulsions just before death. Both Cunningham[5] and Wall[6] looked upon these symptoms as being due to a direct irritant action of the poison on the central nervous system,

[1] THE LANCET, Jan. 2nd (p. 20); August 20th (p. 518); and Oct. 22nd, 1904 (p. 1146).
[2] Cunningham: Scientific Memoirs by Medical Officers of the Army in India, part ix., 1895, and part xi., 1898. Wall: Indian Snake Poisons: their Nature and Effect, W. H. Allen and Co., London, 1883. Lamb and Hanna: Scientific Memoirs by Officers of the Medical and Sanitary Departments of the Government of India, New Series, No. 3, 1903. Lamb: Ibid., No. 4, 1903. Rogers: Proceedings of the Royal Society, vol. lxxii., 1903. Flexner and Noguchi: University of Pennsylvania Medical Bulletin, July-August, 1903. Preston Kyes: Berliner Klinische Wochenschrift, Nos. 42 and 43, 1903; Hoppe-Seyler's Zeitschrift für Physiologische Chemie, Band xli., Heft 4.
[3] Loc. cit.
[4] Scientific Memoirs by Officers of the Medical and Sanitary Departments of the Government of India, New Series, No. 3, 1903.
[5] Loc. cit. [6] Loc. cit.

especially on the centres of the medulla. Both these observers had, however, overlooked the fact that on post-mortem examination in most of these cases an extensive intravascular thrombosis is found. Further, it has been pointed out[7] by one of us that this intravascular clotting, affecting, as it does, principally the pulmonary arteries, is quite an adequate explanation of the symptoms observed and of the rapidly fatal result which follows. A closer study of the phenomenon above described has, however, led Rogers[8] to the conclusion that the intravascular thrombosis is not in some of these cases of sufficient extent to account for the fatal result. By injecting a small preliminary dose of venom, an amount which did not cause intravascular clotting but produced a negative phase of diminished coagulability, this observer was able to bring about quite rapid deaths without any intravascular clotting. He is of opinion that in these cases in which the thrombosis is absent or not of sufficient extent to cause death the fatal result is to be ascribed to a rapid vaso-motor paralysis which he considers to be of central origin—that is to say, a complete paralysis of the vaso-motor centre in the medulla. These cases of acute intoxication do not, however, concern us much at this time, for we have already seen in the case of cobra venom that a certain interval of time—namely, from two to three hours—must elapse between the injection of the poison and the death of the animal before any degenerative changes can be demonstrated microscopically in nerve cells. It therefore appeared to us useless to examine the nervous system of animals which had died with these acute symptoms of intoxication with the view of ascertaining whether any degenerative changes had occurred in the cells of the vaso-motor centres.

The second class of cases of intoxication with the venom of daboia Russellii consists of those animals in which death is delayed for some time after the injection of the poison. This interval may vary from one or two hours to several days. The symptoms which are observed in these more or less chronic cases may be divided into local and general. The local symptoms depend on a destruction of the tissues around the site of inoculation and on an extensive hæmorrhage into these parts. In some cases either local sloughing or a rapidly spreading gangrenous condition supervenes. In other cases a simple subcutaneous abscess develops at the site of injection. These several conditions depend, of course, on the nature of the bacteria which become planted in the tissues already damaged and devitalised.

It is, however, the general symptoms which are seen in these cases which concern us most at this time. They are as a rule very indefinite and somewhat difficult to interpret. In some few cases hæmaturia has been observed, while in others an actual hæmorrhage from the bowel occurred. It may be said, however, that external hæmorrhage is not nearly so prominent a symptom in cases of intoxication with this venom as in cases of poisoning with crotalus venom. Considerable œdema of the scrotum and penis and other dependent parts is often seen. The animals appear depressed, dull and lethargic, and refuse food. The external surface of the body becomes markedly cold to the touch. If the animal lives for a few days emaciation is marked and profound anæmia develops. In no case, however, have we ever seen paralysis of the muscles nor any symptoms pointing to the involvement of respiration. In some instances, especially in large animals, symptoms pointing to cardiac syncope are very prominent. Thus we have seen a horse which had received into a vein a quantity of poison not sufficient to cause clotting fall down quite collapsed, its pulse hardly to be felt, and its body covered with a cold sweat. There was no paralysis. After a short time the animal got up and walked away, only, however, to fall down again in the same condition as before. These symptoms have only been observed in the early stages soon after the injection of the poison.

The interpretation of these symptoms is, as we have said, somewhat difficult. It has been shown[9] by one of us that daboia venom has a marked destructive action on the red blood corpuscles and also that in these chronic cases there exists a negative phase of deficiency, in some cases amounting to complete inhibition of blood coagulability. Further, it has been shown by Flexner and Noguchi[10] that this venom is extremely cytolytic for various cells—namely, liver cells, kidney cells, and cells of the testis. To these pathological conditions we can ascribe many of the symptoms observed. Rogers[11] has suggested that in these chronic cases the lethal effects of this poison are partly, if not wholly, due to a paralysis of the vaso-motor centre. As we have mentioned above, he brings forward experimental evidence which shows that in the acute cases of poisoning in which death rapidly supervenes on the injection of the venom there is a paralysis of the vaso-motor system which is of central origin. He does not, however, put forward any experiments which point to this condition being present in these chronic cases, cases in which only a small amount of poison has been injected subcutaneously. With a view of ascertaining whether there is any direct action of this venom on the nervous system we have examined the central nervous system and the peripheral nerves in the following cases:—

Animal.	Weight in grammes.	Dose of venom in milligrammes per kilogramme.	Time before death.
Monkey 21	2900	1·35 into femoral artery.	4 hours.
,, 22	2520	1·5 subcutaneously.	4 ,,
,, 23	2265	2·0 ,,	7½ ,,
,, 24	2320	0·8 ,,	12½ ,,
,, 25	1580	3·8 ,,	13½ ,,
,, 26	2365	1·0 ,,	18 ,,
,, 27	1310	1·0 ,,	20 ,,
,, 28	2500	1·0 ,,	20½ ,,
,, 29	2160	1·0 ,,	60 ,,

The tissues from Nos. 22, 25, 27, and 29 were fixed in formol (5 per cent.); those from the remaining monkeys in perchloride of mercury. Sections from all the cases were stained with thionin according to Nissl's method and with hæmatoxylin and eosin. In Nos. 23, 28, and 29 Busch's method of fixing and staining was also used. In No. 28 the nerve terminals (muscular) were put directly into 1 per cent. osmic acid and afterwards teased out in xylol. A careful examination of the sections of the central nervous system has failed to discover any degenerative change in the ganglion cells of the cortex, pons, medulla, or cord in any of the cases. Even in Monkey 29, dead after 60 hours, there was no suggestion of any breaking up of the chromatic granules. In this case the tissues were not so well fixed and sections did not stain so well as in the other cases. Whether this was due to an accident of fixing or to the venom acting on the tissues or on the circulation one cannot be certain. Still the Nissl granules could be seen to be quite intact and there was no suggestion whatever as of a toxin acting directly on the ganglion cells. Further, there was no evidence of this venom having a special affinity for any of the cranial nuclei or other groups of ganglion cells; the cells in the tenth (motor) nuclei were equally intact with those of the cord and other cranial nerve nuclei. In all the cases there was marked dilatation of the capillary vessels throughout the grey matter of the central nervous system and in most of the cases slight capillary hæmorrhages were also to be seen. There was no apparent increase of the connective-tissue cells (neuronophagen cells). Neither was there any appearance of degenerate fibres with Busch's method of staining. The peripheral nerves gave no degenerative reaction with osmic acid (Marchi or Busch) and there was no apparent increase in the number of their internodal nuclei. The axis cylinders seemed normal. The nerve fibres in the nerve terminals (osmic acid) appeared quite normal. In short, a careful examination of the nervous system showed no definite departure from the normal in any of these cases.

When we contrast this result with the results of the similar examinations of the nervous system in cases of intoxication with the venoms of the cobra and bungarus fasciatus detailed in our previous papers we can at least conclude that daboia venom contains no neurotropic element having a wide-spread action on motor ganglion cells as in the cases of the other two poisons. But to show that daboia venom had no action on the vaso-motor centre was a matter of considerable difficulty. For, to begin with, the localisation of this centre has not yet been certainly determined. Physiologists tell us

[7] Loc. cit.
[8] Proceedings of the Royal Society, vol. lxxii., 1903.
[9] Scientific Memoirs by Officers of the Medical and Sanitary Departments of the Government of India, New Series, No. 4, 1903.
[10] Loc. cit.
[11] Loc. cit.

that it lies in the ventral aspect of that portion of the bulb which extends backwards from the superior olive as far as the ala cinerea. It is further suggested that the antero-lateral nucleus is the most obvious collection of cells in this area and that it is in this group of cells that one would expect the vaso-motor centre to be situated. We accordingly examined by means of serial sections this "vaso-motor area" of the bulb in three of the monkeys above noted—viz., Nos. 23, 24, and 26—and also in a fourth—viz., Monkey No. 30 (weight 2270 grammes, received one milligramme per kilogramme and died in 17 hours). In Nos. 24 and 26 the serial sections were cut transversely, but in Nos. 23 and 30 in a longitudinal direction so as to include as much of the lateral nucleus as possible. These longitudinal sections were cut from both sides of each bulb, so that we had four sets of longitudinal sections of the lateral nucleus to examine. For comparison with these we cut corresponding serial sections from four normal monkeys, the sections in two being transverse and in the other two longitudinal. But even with so many sections at one's disposal there was still difficulty in being certain as to the conclusions to be drawn. For the lateral nucleus seems to be a rather ill-defined group of cells and apparently not always constant in regard to its situation. And the other cells of the reticular formation are even less easily assorted. The type of cell, too, in the reticular formation generally varies a good deal and sometimes it was difficult to be certain that a cell which normally would stain rather faintly was not a different type of cell undergoing degeneration. But by carefully comparing the sections from the normal monkeys with those of the animals killed with daboia venom we have come to the conclusion that we can show no certain evidence of even an early chromatolysis going on in these ganglion cells lying within this "vaso-motor area." And it is to be particularly noted that none of the cells showed vacuolation such as we described in the animals killed with cobra and bungarus fasciatus venom. Even after six hours vacuolation was well marked in the cobra cases, so that after 17 hours (Monkey No. 30) and 18 hours (Monkey No. 26) there would surely have been some appearance of vacuolation in these "vaso-motor area" cells if the daboia venom had been acting specially on them. We have therefore to conclude that these sections give no satisfactory evidence of daboia venom having a selective action on any of the ganglion cells in that part of the bulb within which the vaso-motor centre is supposed to be situated. These observations therefore support the conception which one of us, along with Dr. W. Hanna, had previously formed of the action of this poison. They show that we must look to the action of the poison on the other tissues and organs for an explanation of the symptoms observed and of the fatal result. Further, our observations lend no support to Rogers's suggestion that these chronic symptoms are dependent upon a vaso-motor paralysis of central origin.

In conclusion, there is one other point which our present observations with the venom of daboia Russellii, taken in conjunction with the similar observations with bungarus fasciatus venom, help to clear up. In our paper on the action of this latter venom on the nervous system we described a chronic form of poisoning in which the symptoms, while quite distinctive and in no way to be confused with the symptoms seen in cases of daboia venom intoxication, pointed to a destruction of the cells of the central nervous system. Now Rogers [12] has recently stated that this chronic affection is due to the venom containing "viperine element," and that while Calmette's antivenine was able to prevent all colubrine symptoms, the animals treated with this serum died from two to four days afterwards with symptoms of chronic viperine poisoning. We have now shown that in true chronic viperine poisoning there is no destruction of the cells of the central nervous system, while in our previous paper we pointed out that in the chronic cases of intoxication with the venom of bungarus fasciatus an extreme chromatolysis and destruction of the cells of the whole central nervous system were easily demonstrable. It is evident, therefore, that chronic intoxication with bungarus fasciatus venom differs from chronic viperine poisoning not only in the symptoms observed but also in the pathological condition which causes these symptoms and that the term chronic viperine poisoning cannot be applied to the chronic cases of poisoning with bungarus fasciatus venom. Further, it is also evident that Calmette's serum had, even in Rogers's hands, failed to neutralise a typical neurotropic poison.

[12] Proceedings of the Royal Society, vol. lxxii., 1905.

THE TREATMENT OF WORD BLINDNESS.

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SURGEON TO THE WESTERN OPHTHALMIC HOSPITAL; OPHTHALMIC SURGEON TO THE CROYDON GENERAL HOSPITAL AND INFIRMARY; OPHTHALMIC SURGEON, CROYDON COUNCIL SCHOOLS.

THE term "word blindness" is not altogether satisfactory and the same may be said of "word deafness." As regards the diagnosis of either condition once we recognise there is a true and also a false variety there can be no difficulty in seeing the direction treatment should take. The true word-deaf does not understand spoken words when they exist in his vocabulary. The pseudo word-deaf do not understand the words because they do not exist in their vocabulary and that at times is very restricted indeed. Then as regards the word-blind there are cases in which the words exist in the patient's mind and those in which they do not. Pseudo word blindness is commonest in children but it may be found in uneducated adults. Teaching the pseudo word-blind to read in the ordinary way is like trying to hang up a hat when there is no peg to hang it on. A moment's consideration will convince the most conservative mind that the methods sufficient for normal children would be inadequate for the word-blind and even barbarous. We must first of all increase the child's vocabulary by placing it in classes where it will hear a maximum of talking, reading, and word-building, and we should in addition also explain the nature of the defect to the parents so as to secure their coöperation; indeed, we should be most careful to point out the condition of defective ear-memory that always complicates pseudo word-blindness. Supposing a child with ordinary intelligence reads the word "frog." In learning word-building he will have learnt to pronounce the word even if he has never seen it in print before. When the appearance of the word constrains him to say "frog" two things occur; he associates the printed symbol with the sound that is indelibly in his head but in addition to that he associates sound and symbol with an objectionable cold-blooded animal which he has maybe seen in a pond by which he is in the habit of playing. The pseudo word-blind, on the other hand, when he is constrained to pronounce the word "frog" on seeing the printed equivalent does not associate it with a sound already familiar to him nor does he, on the other hand, associate it with a forbidding cold-blooded animal or a pond. Such considerations suggest the expediency of filling the minds of such children with intelligent speech before we try to teach them to read in the ordinary way. Little wonder if some of them take a thorough dislike to school and eventually subside into dunces that the teachers object to and wish to pass on to a defective centre.

Perhaps a word may be necessary as to diagnosis. My plan is as follows. The child is said to be backward. One notes at a glance that he is very observant as regards what he sees. One then says, "Raise your right hand." If he does so then he understands spoken language. I then say, taking care he does not see my lips, "I want you to remember three days, Monday, Wednesday, and Saturday." After that I remain quiet for a second and put him well at his ease and ask, "How old are you?" After he has replied I then say, "What were the days I asked you to remember?" In most cases, unless the case is a very slight one, he will fail to give the days and very rarely indeed can he give them in the proper order. I then ask him a question in elementary arithmetic such as he should be able to answer. If I am dealing with a child of eight years I ask, How many are three threes? Not improbably his answer is seven or some other figure equally wide of the mark. Now, obviously three threes are nine, it is a mere matter of memory, and he has heard it hundreds of times, yet he does not remember. Inquiries are then made as to spontaneous speech and it is always found to be very limited. A few words will make the reason clear. Spoken words are memorised permutations of phonetic syllables. Try to reproduce the syllables in "remarkable," "transposition" out of their memorised order. With a defective vocabulary, then, it is clear spontaneous speech must suffer. Such children tend to shut themselves up in themselves and avoid brighter ones, because with so few words at their disposal their conversation is too limited and they feel their dulness. Apart from the question of vocabulary the children are at a disadvantage. Phrases are essential to conversation and

are rarely the spontaneous creation of the conversationalist. The most clever dialectician adds very little indeed to phraseology. Almost every sentence he uses he has acquired parrot-like by his ears or his eyes. The truth is, phrases are memorised permutations of words and we can barely give a list of the words out of their memorised order. Thus the pseudo word-blind suffers, not merely from a bad vocabulary, but also from a restricted phraseology, a further reason why he avoids the society of brighter children. Thus most of these children present an apparent defect of intellect out of all proportion to the actual physiological condition. The above remarks will have prepared the reader to recognise the necessity for such terms as "word-hearing" and "phrase-hearing." In a future paper I hope to make this clearer and show some very interesting results from its recognition. One may, however, point out how little word-hearing affects phraseology. The most erudite, though familiar with thousands of words not used in everyday life, scarcely, if ever, coins a new phrase capable of continuous existence. Just as we have word and phrase defects in connexion with hearing, so in seeing. Reading would be an impossibility on account of the mental strain it would involve if we had to notice every letter in every word or even every word in a sentence. The fact is, we recognise both words and sentences by their general appearances. Word-building is taught in all schools but far less attention has been paid to phrase-building. Happily it is not altogether necessary, as we learn it involuntarily later.

True word blindness in children is very rare indeed. In any case we must first determine the nature of the disease before prescribing treatment. In cases of the pseudo variety the children should be put where they hear a great deal of talking until we have improved their vocabulary and phraseology nearly or well up to the normal. Then, and not until then, should they be put to read in classes. If the attempt is made earlier they lose confidence. It is a great advantage to the child before going into a reading class to go over what is going to be read—once they have learned word-building—and they should be instructed to score lightly every word that they have to spell. Having done this they should go over the words repeatedly, using an isolater—a disc with an oblong opening in it—so that context reading does not enable them to recall the words. The isolater makes the word show up sharply and the mere variations in type, as well as the extra clearness, enables the child to get better mental images. Thus the treatment of the pseudo variety consists in:—1. Extending the child's vocabulary and phraseology. 2. Spending more time than usual in the word-building classes. 3. Scoring all words it has to spell and afterwards going over them many times with the isolater. It is well for the child to take his scored book home if he is very backward and his parents, previously educated as to the nature of his defect, should be asked to go over his work with him, though this is, I think, rarely called for except to teach elementary arithmetic. 4. After the child is able to read the lower standard books he should be advised to attend churches where services are read, so that as many words as possible shall be brought under his attention as he reads. How many times would a child, word-blind for, say, "name," "praise," "wicked," see those words in the course of a service, and it must be remembered that by this endless repetition alone can he learn to read fluently.

As regards the treatment of true word blindness, to begin with the condition is excessively rare. One thing is pre-eminently and beyond all things necessary, and that is repetition. I can conceive no better plan than the diligent use of the isolater and word-building, together with attendance at readings, &c., so that the unmemorised words come under the patient's notice time after time every day. A word is necessary as to the position of these boys in class. They must always be put where they can hear without any effort whatever. This requires tact. I think the best way is to move the child from time to time, say, into the centre of a group of eight boys arranged with three in a line behind him, three in front, and one or either side—the boys to read seriatim. In this case he hears without any difficulty and no mental energy is taken from his efforts to read.

For pseudo cases that experience trouble in learning their elementary arithmetic I devised some little time ago "implication tables." At the end of my communication is a specimen of "seven times." It will be noticed when a child is learning "seven times" it is revising two, three, four, five, and six sevens. My instructions to the parents are that the child should say seven twos are 14; the parent, twice seven are 14. The child, seven threes are 21; the parent, three sevens are 21. The child, seven fours are 28; the parent, four sevens are 28; and so on. Thus the child is learning not merely "seven times" but implications of seven. Even when he is learning his "two times" tables he is unknown to himself and unwittingly learning his other tables. At the upper line will be seen numbers increasing seven at a time. From that he can memorise, seven and seven are 14, and seven are 21, 21 and seven are 28. Or he can learn subtraction in the same way, or move by increments of 14: thus seven and 14 are 21, 14 and 14 are 28, 21 and 14 are 35, and so on. These exercises are only advised as an amusement, though they are really necessary, as proved by the fact that such additions and subtractions are memorised sooner or later. Just at present teachers in elementary schools are imbued with a notion that a child should see three sevens are 21. The "Tables" show this together with the additions of seven that go to make 21. Personally I think this is a matter of no importance. I have shown how the parents are to use the "Implication Tables" to teach a child. It now remains to show how they are to teach addition, subtraction, multiplication, and division. The child is told, for instance, to write implications of 7 7 7 7 7 / 8 9 10 11 12. If the child cannot add up seven and eight the three compartment carrier[1] is put on the "table" so as to enclose $\frac{7}{8}$. The child is instructed to add eight to the upper seven and to do this imagines the seven numbers in arithmetical progression are seven apples with numbers on them, and these he counts and finds seven and eight are 15. This tells him where to fix the one compartment carrier—viz., so as to inclose in its square 15. He then writes on his slate seven and eight are 15, but he sees eight and seven are 15, and promptly writes it also. He then sees, and can prove if necessary, eight from 15 are seven and seven from 15 are eight, eight sevens are 56, and seven eights are 56, 56 divided by seven = eight, and 56 divided by eight = seven. I have called these "Implication Tables": practically they are tables of converses. By the use of these aids at home it is no uncommon thing for these children to make more progress in three weeks than they have made during from three to five years by recognised methods. In hospital I always look out for these "defectives" for the reason that by means of the "Implication Tables" it is so easy to help even the worst cases. They can be obtained from Mr. Harold Wigg, 200, Croydon-road, Anerley.

"Implication Table" ("Seven Times").

7	14	21	28	35	42	49	56	63	70	77	84							
7	7	7	7	7	7	7	7	7	7	7	7							
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
7	14	21	28	35	42	49	56	63	70	77	84							

Showing the Table with the Carriers in Position for Implications of $\frac{7}{8}$.

7	14	21	28	35	42	49	56	63	70	77	84							
7	7	7	7	7	7	7	7	7	7	7	7							
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
7	14	21	28	35	42	49	56	63	70	77	84							

PS.—The "Implication Tables" are pieces of cardboard with the numbers printed on them as above. The "carriers" are windowed slips of cardboard which can be slid along the other cardboard so as to mark off any vertical row of figures into three compartments.

Victoria-street, S.W.

[1] See PS. at end.

DEATH OF A CENTENARIAN.—The *Times* states that the funeral took place on Sept. 13th at Bere Alston, near Devonport, of Mrs. Jane Rowse, who on June 24th last celebrated the 101st anniversary of her birthday. She was a native of St. Columb, Cornwall, and came of a long-lived family.

THE TREATMENT OF STRYCHNINE POISONING AND OF TETANUS BY SPINAL ANÆSTHESIA.

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THE action of strychnine appears to be directed to the sensory side of the sensori-motor apparatus, and it is generally held that under the influence of strychnine the sensibility of the sensory cells and tracts is so heightened that a moderate stimulus meets with little or no resistance and passes on to the motor cells an overwhelming stimulation resulting in the production of the convulsions so characteristic of strychnine poisoning. Professor C. S. Sherrington in his studies on Reciprocal Innervation of Antagonistic Muscles has, however, given a different account of the strychnine effect based on experimental work. In his various papers on reciprocal innervation he has demonstrated the existence of the rule that in any muscular action there is not only contraction of one group of muscles but inhibition of the opposed group. He has shown, for example, that stimulation of the afferent nerve of the flexor muscles of the knee-joint restrains the knee-jerk of that side by the coincident inhibition of the extensor muscles.

In a paper read before the Royal Society on May 18th, 1905, Professor Sherrington[1] described many experiments he had made, the results of which showed that under the influence of both strychnine and tetanus toxin this reciprocal inhibition was converted into excitation—that is to say, that whereas normally the stimulation of a certain area of skin or of a certain muscular afferent nerve leads to the contraction of a definite group of muscles—in the case of strychnine poisoning stimulation of the same area or nerve leads to the contraction not only of the first-mentioned group but also of their opposing or antagonistic muscles. The same effect was produced by cortical stimulation. Thus stimulation of the cerebral cortex of the cat with unipolar faradisation readily elicited flexion of the opposite knee, while it was quite exceptional to obtain extension of the opposite knee. After the exhibition of strychnine extension of the opposite knee was readily excited on cortical stimulation and from the very points of it that yielded flexion previously. It required larger doses of strychnine, however, to modify the results of cortical stimulation than to affect the spinal reflex. Tetanus toxin likewise converted cortical flexion into extension. In his concluding remarks Professor Sherrington states that "the foregoing observations appear to give an insight into at least a part of the essential nature of the condition brought about by tetanus and by strychnine poisoning. These disorders work havoc with the coördinating mechanisms of the central nervous system because in regard to certain great groups of musculature they change the reciprocal inhibitions normally assured by the central nervous mechanisms into excitations. The sufferer is subjected to a disorder of coördination which, though not necessarily of itself accompanied by physical pain, inflicts on the mind, which still remains clear, a torture inexpressibly distressing. Each attempt to execute certain muscular acts of vital importance, such as the taking of food, is defeated because exactly the opposite act to that intended results from the attempt. The attempt to open the jaw to take food or drink induces closure of the jaw, because the normal inhibition of the stronger set of muscles—the closing muscles—is by the agent converted into excitation of them. Moreover, the various reflex arcs that cause inhibition of these muscles not only cause excitation of them instead, but are, periodically or more or less constantly, in a state of hyper-excitement, and yet attempt on the part of the sufferer to restrain, to inhibit, their reflex reaction, instead of relaxing them, only heightens their excitation further, and thus exacerbates a rigidity or a convulsion already in progress."

That the convulsions produced by strychnine are markedly related to afferent inpressions is well known. Thus, a pithed frog poisoned with a moderate dose of strychnine lies perfectly quiescent but the slightest cutaneous stimulation evokes violent spasms. Similarly in cases of poisoning in man a very slight stimulus, such as the shaking of the bed or the slamming of a door, often suffices to produce violent convulsions. The same condition has also been found to obtain in tetanus. It might therefore be hoped that if afferent impressions could be prevented from reaching the spinal cord the spasms might be either prevented or at least diminished. This is, in fact, realised in practice, the patient suffering from tetanus being isolated in a room to himself and all possible sources of external irritation being carefully avoided. Poulsson[2] showed that a frog dipped in cocaine solution yielded no convulsions after an injection of strychnine, the cocaine preventing afferent impressions from the skin reaching the spinal cord in virtue of its action in paralysing the terminations of the sensory cutaneous nerves. Further proof of the relationship of the convulsions to the afferent impressions was afforded by Claude Bernard's experiment of dividing all the posterior roots of the spinal region in the frog, followed by the injection of strychnine. No convulsions occurred except when the central ends of the cut posterior roots were stimulated.

The injection of cocaine and allied drugs into the spinal subdural space which has, of late years, been used for the production of surgical anæsthesia produces that result by paralysing the posterior roots and their immediate connexions; in other words, cocaine produces a temporary physiological section of the posterior roots, the patient being for the time in the same position as the frog above mentioned. The induction of spinal anæsthesia could then conceivably annul the convulsions produced by strychnine. Spinal anæsthesia was first described by Dr. Leonard Corning,[3] who produced it first in a dog and then in a man. In his original communication he suggests its use in cases of strychnine poisoning, tetanus, and hydrophobia.

Experiments were undertaken to investigate this point. Spinal anæsthesia was duly induced by the injection of cocaine hydrochloride, a 1 per cent. solution in normal saline solution. Of this from one to two cubic centimetres were injected into the animals under observation. Within from five to ten minutes a solution of strychnine hydrochloride 0·25 per cent. was then injected into the external jugular vein.

After such an experiment convulsions would appear within about a minute in the neck and forelimbs, while the trunk and abdominal muscles and the hind limbs would remain perfectly flaccid. In quiescent intervals convulsions in the anterior limb and neck could be at once elicited by the slightest tap on the forelimb or shoulder region, while severe stimulation of the trunk, abdomen, or hind limb evoked no response whatever. In one case only were the anterior as well as the posterior limbs rendered insensitive after the lumbar injection. By injecting the cocaine into both the cervical and lumbar regions both fore and hind limbs are rendered flaccid. If the cocaine be injected into the cervical subdural space alone the fore limbs then become resistant to the strychnine effect while spasms and rigidity occur in the hind limbs. Light tapping with, for instance, the handle of a scalpel is the most efficient form of stimulus to apply, the very slightest tap in a non-cocainised strychninised animal evoking violent spasms. As has been noticed in cases of strychnine poisoning in man firm pressure or rubbing does not induce spasm.

Results such as this strongly suggest the advisability of injecting cocaine into the spinal theca of man in cases of strychnine poisoning.

One difficulty in connexion with cocaine is that a solution cannot be boiled. The most complete sterilisation of any fluid injected into the spinal theca is a matter of the greatest moment and for this reason alone the use of eucaine β, solutions of which can be sterilised without decomposition by boiling, would be preferable. This salt, moreover, is much less toxic than cocaine and unpleasant or dangerous effects practically never attend its use. If cocaine be used certainly not more than half a grain should be injected at once and it would be well to commence with a much smaller quantity, say two cubic centimetres of a 1 per cent. solution, which would contain just under a third of a grain. Eucaine may be used more freely and M. Silbermark[4] advises the injection

[1] On Reciprocal Innervation of Antagonistic Muscles, eighth note. By C. S. Sherrington, D.Sc., F.R.S., Proceedings of the Royal Society, vol. lxxvi., No. B. 509, p. 269.

[2] Archiv für Experimentelle Pathologie und Pharmakologie, Band xxvi., p. 22.

[3] New York Medical Journal, 1885, p. 483.

[4] Wiener Klinische Wochenschrift, November, 1904, p. 1227.

of from one to two cubic centimetres of a 3 per cent. solution of eucaine β. One cubic centimetre of this would contain practically half a grain. He records 200 successful cases of anæsthesia with this method.

Inasmuch as a fatal dose of strychnine usually causes death within two hours after being swallowed it is obvious that there is very little spare time in treating it. With severe convulsions and opisthotonos it would be practically impossible to perform a lumbar puncture. Deep chloroform narcosis would have to be first induced and then the puncture performed. It is needless to describe this well-known little operation. Two cubic centimetres of a 1 per cent. solution of cocaine is ample to produce complete analgesia over the whole of the body and would probably annul all spasms so long as the anæsthesia lasted. The anæsthesia in man lasts a variable period, from one to two hours. If convulsions recommenced a further injection should be tried. Fortunately strychnine is very rapidly eliminated, appearing in the urine within as short a time as half an hour after its administration in man. Inasmuch as cocaine can absolutely control strychnine convulsions as noted above in animals, and inasmuch as in man it can produce the most perfect anæsthesia of the whole body lasting for about two hours, its use in cases of strychnine poisoning seems strongly indicated. But it must be borne in mind that in large doses and in its late stage strychnine may produce a paralysis of the motor nerve endings with results comparable to those produced by curare.

TETANUS.

Tetanus would appear to offer another field for the therapeutic use of cocaine or eucaine in the form of subdural spinal injections. The spasms of tetanus are presumably due to an excitation of the motor mechanism of the spinal cord, whether, as in the case of strychnine, by increasing the irritability of the sensory side of the arc or by directly acting on the motor cells, is perhaps not certain. But, at any rate, by inducing anæsthesia great relief of pain would be effected, and in the following case recorded by J. B Murphy[5] each spinal injection was followed by a sleep of several hours' duration with complete freedom from convulsions during that time. As this case is one of great importance I give a full abstract of it.

The patient was a boy, eight years of age, who cut his foot seven days before admission to hospital. Six days after the accident stiffness of the jaws appeared, followed by spasms of the neck muscles. On admission to the hospital on July 10th, 1904, he was anæsthetised and the wound was treated surgically. Convulsions were occurring every 15 minutes. On the 11th convulsions were almost continuous and he was given three doses of antitetanic serum. On the 13th lumbar puncture was performed. 16 cubic centimetres of cerebro-spinal fluid were withdrawn and three cubic centimetres of the following fluid were injected: one and a half grains of eucaine β, one-third of a grain of morphine sulphate, three grains of sodium chloride, with water to three and a half ounces. Three cubic centimetres of this would contain approximately $\frac{1}{100}$th of a grain of morphine and $\frac{1}{30}$nd of a grain of eucaine β. The boy slept for four hours immediately after the injection and in the night one and a half hours. Only eight spasms occurred in the succeeding 24 hours and the spasms were shorter. On the 14th he had the severest spasm of all. At 11 A.M. 15 cubic centimetres of cerebro-spinal fluid were withdrawn and four cubic centimetres ($\frac{1}{15}$th of a grain of eucaine β and $\frac{1}{75}$th of a grain of morphine) of the above fluid were injected. He slept again for four hours and only eight spasms occurred in the succeeding 24 hours. On the 15th the operation was repeated. 15 cubic centimetres were withdrawn and four cubic centimetres were injected. On the 16th the same procedure was gone through. On the 17th his condition was good. No injection was given. On the 18th the spasms occurred every hour but were milder. On the 19th aspiration and injection were performed. On the 20th a few mild spasms ensued. On the 21st the spasms were slightly severer and occurring every three hours. Aspiration and injection were performed. No more spasms supervened and the trismus gradually subsided. The boy was discharged cured on July 31st. The effects observed after the injection were an almost immediate relaxation of the spinal muscles which remained relaxed for some time, enabling the patient to sleep.

A striking feature in the above case was the small quantity of cocaine injected, amounting to only $\frac{1}{75}$th of a grain per dose. It is true that morphine was also given but in the very small dose of $\frac{1}{75}$th of a grain. Considering the almost complete immunity to ill results attending the use of eucaine it is probable that a larger dose might be given safely. This would be determined by experiment.

Several cases in which antitetanic serum has been injected into the spinal theca are now on record. Wallace and Sargent[6] report four cases treated in this way with three recoveries. Eucaine and serum could be injected together. Owing to the rigidity of the back and the tendency to opisthotonos chloroform anæsthesia would doubtless be necessary in nearly all cases, and owing to the tendency to spasm a rather stout needle should be employed, one not less in length than three and a half inches. The addition of adrenalin solution to the eucaine as practised of late might be an additional advantage.

Conclusions.—1. Strychnine convulsions only occur when the spinal cord receives afferent impressions. If these be cut off by section of the posterior roots the spasms do not appear. Spinal cocainisation or eucainisation causes a temporary physiological "section" of the posterior roots and experimentally in animals controls the strychnine convulsions. Its trial in cases of strychnine poisoning in man is therefore strongly indicated. 2. The spasms of tetanus are very similar to those produced by strychnine and are also markedly increased by afferent impressions One case, as noted above, has already been treated by spinal eucainisation with most beneficial results, and it is important that the method should be given a wide trial.

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[5] A Case of Tetanus successfully Treated by Aspiration of Cerebro-Spinal Fluid and Injection of Morphine, Eucaine, and Salt Solution, Journal of the American Medical Association, August 13th, 1904.

[6] Four Cases of Tetanus Treated by Injections of Antitoxin into the Spinal Theca, THE LANCET, March 5th, 1904, p. 642.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

A CASE OF SUCCESSFUL REMOVAL OF A LARGE PAPILLOMA OF THE RECTUM.

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THE following case was recently under my care at St. Mark's Hospital. I have thought it worth recording, as papillomata of the rectum are uncommon.

The patient, who was a man, aged 63 years, gave the following history. He was quite well until about May, 1903, when he had a bad attack of diarrhœa lasting about six weeks. He passed six or seven motions a day; they were accompanied by a certain amount of tenesmus and pain in the upper sacral region, but at this time he had not noticed any blood with the stools. He improved under medicinal treatment and was apparently well for three months, when he had another attack of diarrhœa lasting about a fortnight and accompanied by the same symptoms as before. Since that time he has had two further attacks of diarrhœa and has noticed a little blood with and after the stools. On admission to St. Mark's Hospital he complained of frequency of defæcation (from four to six motions per diem) accompanied by tenesmus and a feeling that the bowel was incompletely emptied. There had been slight bleeding on several occasions; there was also a certain amount of rectal discharge. He had lost flesh slightly. There was a little dull pain in the upper sacral region but this usually disappeared when he lay down. On passing the finger into the bowel a soft papillomatous mass was felt in the posterior rectal wall about four inches from the anus. The growth was of about the size of a five-shilling piece, somewhat tender, and it bled slightly after examination. With the electric sigmoidoscope the growth could be easily seen above the middle Houston's valve. The patient having been prepared for operation in the usual way, on Nov. 17th, 1904, he was placed in the left

Sims's position and an incision was made from the base of the coccyx to about one inch behind the anus. The coccyx was freed and removed entirely. The rectum was then freed in all directions so as to allow that part of it in which the growth was situated to be brought well up into the wound. The wound itself was next packed with gauze and gauze was placed around that portion of the rectum which was to be opened. An incision was made into the posterior wall of the rectum to one side of the growth and that portion of the bowel from which the tumour was growing was excised together with half an inch of healthy tissue around it. The portion of the posterior rectal wall removed measured three square inches. The wound in the mucous membrane was closed by a continuous suture and another line of suture was used to close the muscular coats. A small drainage tube was inserted in the upper part of the wound and the skin wound was then sewn up.

The patient made a practically uninterrupted recovery. A slight rise of temperature occurred on the third day and continued till the fifth day after operation, disappearing after the bowels were opened. He was discharged from the hospital a fortnight later. The last time that he reported himself he was perfectly well and only a slight narrowing of the bowel could be felt in the rectum at the original site of the tumour. Microscopically the growth presented the ordinary appearance of a papilloma; there was, however, some small-celled infiltration of its base and a slight ingrowth of the epithelium suggestive of commencing malignant degeneration.

As I have already mentioned, papillomata of the rectum are by no means common, rather less than 40 cases in all having been recorded. The form of rectal papilloma most usually described is of the nature of a villous tumour, similar to the villous tumours which are found in the bladder. The growth in this case was sessile and its surface was nodular rather than villous. An interesting point is the fact that so large a portion of the posterior wall of the rectum can be removed (in this case three square inches) without causing any serious narrowing of the lumen of the bowel. As far as the patient was concerned the restoration of function was complete, the loss of the coccyx causing him no inconvenience.

Cavendish-place, W.

A CASE OF BLACKWATER FEVER TREATED WITHOUT QUININE.

BY DAVID DONALD, L.R.C.P. & S. EDIN., L.F.P.S. GLASG.

THE article by Dr. R. Mowbray in THE LANCET of August 26th (p. 599) is interesting as showing the difference of opinion as to whether quinine ought to be prescribed in the treatment of blackwater fever or not. Without doubt quinine is a specific in the treatment of malaria and on the presumption that blackwater fever is closely allied to that disease is considered necessary. But that such connexion exists has not yet been clearly proved.

A few weeks ago I was called to see a young man who had just returned from Nigeria. He had served there as an engineer for two years and a few months before coming home had a severe attack of blackwater fever. The condition of matters when I saw him was as follows. He lay in bed almost collapsed, his expression was anxious, his lips were bloodless, and he could only talk in a whisper. His temperature was 102° F. and his pulse was almost imperceptible. He complained of intense frontal headache and sickness, with pain referred to the region of the kidneys. Beside his bed was a vessel filled with urine deeply stained with blood. The danger of absolute collapse was so great that I had hot water bottles put into his bed, and fomentations over the kidneys and small quantities of champagne and hot milk alternately every hour were ordered. The following morning he had rallied considerably. His pulse was better, his temperature was 101°, the sickness was less, and the headache was not quite so severe. I gave him ten grains of phenacetin and caffeine (eight of the former and two of the latter) and prescribed iron and strychnine, continuing the champagne and milk with an occasional spoonful of Brand's essence of beef. On the following day the headache had gone, there was no sickness, the temperature was 100°, there was still slight pain over the kidneys, and the urine was still bloody. The champagne was now stopped and milk puddings, light soup, and barley water were ordered. On the next day the temperature was almost normal and the urine was much more clear. The patient asked to have some beef-tea and this I allowed. On the next morning I was sent for early as the patient was worse. I found on arrival that he had a rigor; the temperature was 103°, the pulse was over 100, he had slight delirium, and the urine was again loaded with blood. I gave phenacetin and caffeine, ordered champagne and milk, and had extra blankets put over him. In the evening he was rather better, the temperature having fallen to 100°.

For the next four days the patient was fed on milk, eggs, white fish, Brand's essence of meat, and twice daily four ounces of champagne. At the end of this period his temperature had come down to normal, his urine had almost cleared, and he had no pain anywhere. He had slight discomfort from the constipated condition of his bowels but this was relieved by a good dose of effervescing sulphate of soda. On the fourteenth day from the commencement of the illness he was allowed out of bed, his urine having become quite clear, and he was given a little carefully cooked meat. I prescribed a mixture of cascara, podophyllum, nux vomica, and spirit of chloroform. On the seventeenth day he had a drive for two hours and on the twentieth day he was able to walk to my house to report. His colour was better, the lips being quite red; he had no pain anywhere and his urine was clear.

Such is the case, and from first to last no quinine was prescribed. The idea of a stimulant treatment was suggested to me by the state of collapse I found the patient in and apparently it suited the case.

Aldershot.

ENDOTHELIOMA OF THE VERMIFORM APPENDIX.

BY PERCY W. G. SARGENT, M.A., M.B., B.C. CANTAB., F.R.C.S. ENG.,

SURGEON TO OUT-PATIENTS, VICTORIA HOSPITAL FOR CHILDREN CHELSEA; LATE RESIDENT ASSISTANT SURGEON, ST. THOMAS'S HOSPITAL; ERASMUS WILSON LECTURER, ROYAL COLLEGE OF SURGEONS OF ENGLAND.

THE following case appears to me worthy of record for two reasons, firstly, the association of a neoplasm with a suppurative attack of appendicitis; and, secondly, the nature of the neoplasm, which proved to be an endothelioma. The clinical details present no feature of special interest. The patient was a girl, 12 years of age, in her first attack, who had been ill for three weeks. A small mass was present in the right iliac fossa. The abdomen was opened by the incision recommended by Mr. Battle through the sheath of the right rectus muscle, the general peritoneal cavity was packed off with gauze, and the abscess was opened by the finger. The appendix was readily found and removed, and the girl made an uninterrupted recovery. The appendix was three inches in length and was acutely inflamed; its mucosa was deeply ulcerated but the wall was not perforated. These changes were most marked in the distal portion, beyond a point half an inch from the cæcum where the lumen was obstructed. The obstruction was found to be due to a spheroidal mass of tissue of the size of a small pea, which projected into the lumen, and appeared to be a tumour. It was examined microscopically by Mr. L. S. Dudgeon, who reported it to be an endothelioma. The child was seen five months later, when the wound was found to be perfectly sound and no evidence of recurrence of the growth could be discovered.

The exact position of the endotheliomata with respect both to their classification and their malignancy must at present be regarded as undetermined. Howard Kelly,[1] however, not only regards them as malignant, but classifies them as carcinomata, for, he says, "there are now on record 49 cases of carcinoma of the appendix, including two designated endothelioma." Arguing from the analogy of the well-known association of carcinoma with chronic inflamation in other situations and commenting upon the rarity of tumours of the appendix compared with the frequency of its inflammatory affections, it is evident that Kelly regards neoplasms of the appendix as secondary to other forms of disease of that organ. This may be true in the milder forms of

[1] Kelly: The Vermiform Appendix and its Diseases, 1905.

appendicitis, but in an acute inflammation which culminates in an abscess, as in the present example, it is evident that the tumour, in giving rise to a definite stenosis, was the primary factor. Battle and Corner[1] have made the suggestion that, inasmuch as quite a small growth may obstruct the lumen of the appendix, the secondary acute symptoms of appendicitis may so completely dominate the situation that, unless a very careful examination is made, a minute tumour may escape observation; or perhaps that the tumour may have disappeared in the sloughing process to which it has given rise.

The pathology of appendicitis bears comparison in many respects with that of intestinal obstruction. A fibrous stricture, an acute kink, the impaction of a concretion and the strangulation of the process in a hernia all have their analogies on a large scale with intestinal obstruction, and the pathological as well as the bacteriological results of such lesions in the two cases differ only in degree. In the case of the appendix the peritoneal symptoms are the more prominent, whilst in the case of the intestine it is the obstructive symptoms which predominate. The case recorded here is an instance of an uncommon condition of the appendix, but it has its counterpart in the everyday phenomena of intestinal obstruction by carcinoma and other tumours.

Harley-street, W.

A CASE OF ENTERECTOMY OF THE ILEUM FOR GANGRENOUS INTUSSUSCEPTION.

BY JOSEPH O. SKEVINGTON, F.R.C.S. ENG.,
ASSISTANT SURGEON, WINDSOR ROYAL INFIRMARY.

THE patient, who was a boy aged 12 years, was admitted into the Windsor Royal Infirmary on July 3rd. His illness commenced suddenly on June 29th with acute general pain in the abdomen. Vomiting began on June 30th and continued till admission. He had had also frequent passage of blood and blood-stained mucus from the rectum. When first seen on July 3rd the boy's condition was very fair. His abdomen varied from minute to minute in degree of hardness—a phenomenon which I have noticed on previous occasions in cases of intussusception, particularly in young children. Resistance could be felt below the liver and in the left iliac region. The rectum contained only a little dried blood. The pulse rate was 120 and the temperature was 99·4° F.

In conjunction with Dr. E. S. Norris laparotomy was at once performed. The abdomen contained a considerable quantity of peritoneal fluid, which was not foul. In the left iliac fossa a mass could be felt resembling the cervix uteri, and on close examination this was found to be the commencement of an intussusception. Attempts at reduction were quite useless. The intussusception having been packed off from the rest of the abdomen, an incision was made through the œdematous ensheathing layer, which exposed gangrenous bowel. Enterectomy was then performed, a bone bobbin being inserted and the ends of the gut being secured over it with Lembert sutures. Three inches of the cæcal end of the ileum only remained, and a slough, some two inches in length, on its surface was also closed with Lembert sutures. The boy's condition while on the operating table was desperate and saline solution was injected into the rectum during the operation. He rallied well, however, and made a good recovery, only interrupted by suppuration at some of the sutures in the abdominal wall. At the time of writing (July 29th) he seems none the worse for the shortening of the bowel, and the wound has almost healed. Nothing further has been seen of the bobbin. The amount of gut removed was estimated at 18 inches. The intussusception was purely intestinal in character. I have to thank Dr. Norris for his advice and assistance in the case.

Windsor.

[1] Battle and Corner: The Surgery of the Diseases of the Vermiform Appendix, 1904.

BRENTRY INEBRIATE REFORMATORY.—The Secretary of State for the Home Department has certified the land and buildings constituting the Brentry Inebriate Reformatory, near Bristol, to be fitted for the reception of 90 males and 150 female patients.

A Mirror OF HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv., Proœmium.

ST. MARY'S HOSPITAL.

AN EXTREME CASE OF THORACIC ANEURYSM.

(Under the care of Dr. A. P. LUFF.)

FOR the notes of the case we are indebted to Dr. D. W. Carmalt-Jones, house physician.

The patient, a navvy, aged 64 years, who had been used to very heavy labour in cement works, was admitted to St. Mary's Hospital suffering from a remarkable form of thoracic aneurysm. He had had syphilis 40 years previously. He stated that he had had a feeling of discomfort in the chest, apparently very vague in character, for about ten years, which he ascribed to the dusty atmosphere of the cement works. Towards the end of 1900 he suffered from "itching" over the sternum and observed a small tumour of about the size of his finger nail which grew rapidly during the following months and in May, 1901, he was admitted to Guy's Hospital. Sir Cooper Perry and Dr. Herbert French give the following account of his condition: "On admission he had a large pulsatile tumour in the second right space, overlapping the sternum, two inches by two and a half inches, without bruit. No other obvious signs.

Showing protruding mass of aneurysm.

He was in from May 7th to August 19th. He was treated with potassium iodide, rest in bed, and injections of gelatine, given after sterilisation, under abdominal skin, eight injections in all. The improvement was obvious after the first injection. By discharge there was no tumour left. He was in again from Jan. 7th to April 29th, 1903. There was again

a pulsatile tumour similar to the original but only about half the original size. Rest in bed and potassium iodide caused it to diminish slightly in size. He went out very slightly relieved. No further gelatine injections were given." On admission to St. Mary's Hospital on Oct. 17th, 1904, he had a conical tumour of the size of a large pear, three inches in height and three inches in diameter, projecting from the upper part of the sternum and the second right costal cartilage, slightly to the right of the middle line. The skin was blue and tightly stretched over the tumour. An expansile pulsation was to be felt and a diastolic shock. The heart sounds were to be heard over it but no bruit. There was no cough, dysphagia, or alteration of voice; the pupils were equal and the pulses were equal in volume and synchronous. The skin was beginning to ulcerate and the case was regarded as hopeless. No drugs were given, but the patient was kept in bed, and in 11 days the apex of the tumour became harder and the height was reduced to two and a half inches. A deep fissure, however, appeared in the skin and on Nov. 2nd the aneurysm ruptured.

Necropsy.—The post-mortem examination showed a sacculated aneurysm of the ascending part of the aortic arch. There was a circular hole in the sternum two inches in diameter at the level of the second costal cartilage, through which the sac protruded. A layer of firm adherent white clot was attached to the wall of the sac. The aneurysm originated just outside the pericardium and involved the bend and first inch of the transverse portion. The illustration shows the condition of the patient on admission.

LIVERPOOL ROYAL INFIRMARY.

A CASE OF TRAUMATIC RUPTURE OF THE LEFT KIDNEY; NEPHRECTOMY; RECOVERY.

(Under the care of Mr. T. C. LITLER JONES.)

A MAN, aged 29 years, was admitted into the Liverpool Royal Infirmary in a collapsed condition. His history was that owing to a skid on the greasy roads the motor car in which he was travelling suddenly swerved and ran over an embankment 18 feet high, throwing him and his friend into a field. The car turned over and in doing so the steering wheel struck him a smart blow in the left lumbar region. He picked himself up and helped his friend to "put things straight a bit." A few minutes after he began to experience pain in the left loin and within a quarter of an hour this pain was excruciating. He lay down in the field for half an hour but feeling no better was carried to a public-house where he remained for two and a half hours more, the usual panacea being administered. Still feeling worse, he was conveyed to the infirmary in a cab, vomiting twice on the way.

On admission he was markedly collapsed; his pulse-rate was only 60 per minute and his temperature was 96° F. He did not present the usual appearance of one suffering from severe internal hæmorrhage but complained of great pain in the abdomen. He was admitted and put to bed where he soon began to rally. When Mr. Jones saw him some time later his pulse-rate was 88 and his temperature was rising. He had a fair colour, his respirations were slow and regular, and he stated that the pain which had been very severe had almost ceased and that he was now fairly comfortable. On examination no bruise was found and no fracture of his ribs could be detected; owing, however, to his corpulent figure an accurate examination of his ribs or even counting them was impossible. A more prolonged investigation was inadvisable but dulness was found as far forwards as the mid-axillary line. The patient soon after entering the hospital passed his urine. It contained blood in large proportion. The diagnosis as that of ruptured kidney with some extravasation of blood was made. Mr. Jones hoped that as the patient was already better the hæmorrhage had ceased and would not re-commence, and furthermore that if an operation were to become necessary the patient would be in a better condition to bear it. Against this possibility there was the argument that when the subject recovered from the shock the circulation improved, the heart beat more forcibly, bleeding re-commenced, and much valuable time was lost. Although it was tempting to administer a small dose of morphine to allay the pain he had the drug was withheld, as the site and the increase of pain were valuable symptoms in such a case. In two hours' time Mr. Jones again saw him and there was then no doubt that an immediate operation was necessary. The dulness had increased to two inches anteriorly to the mid-axillary line, he was sweating profusely, his expression was anxious, the pulse-rate had increased to 100 per minute, and the pain was now unbearable. There was a tendency to lie with the left leg slightly flexed and an unusual desire existed on the patient's part to be operated upon at once.

The patient being under the influence of chloroform the whole of the left side was carefully sterilised, as it was not at all certain that the kidney alone was injured, and it was also doubtful whether the hæmorrhage was intra- or retro-peritoneal, though the clinical signs pointed to the latter condition. The incision was started at what Mr. Jones took to be the position of the tip of the twelfth rib and continued towards the anterior superior spine of the ilium until about six inches long, in order to have immediate easy access to the seat of the injury. A sand pillow had been placed under the opposite loin to increase the space between the ribs and the crest of the ilium. The patient's figure has been referred to previously, but although the lower ribs could not be accurately felt Mr. Jones was surprised to find, posterior to his incision, a long rib of which about three inches were exposed in the wound. There was neither attachment to this bone of any intercostal muscle nor was the ligamentum arcuatum externum attached to it. This rib appeared to run in the substance of the transversalis muscle and approached to within an inch of the crest of the ilium, notwithstanding the fact that the patient was at the time flexed to the right side. Mr. Jones had on this occasion two assistants, Dr. Scott and Dr. Knowles, who both saw this abnormality. The rib above this one had the usual muscular relations, course, and appearance of the twelfth rib, so that if this was not a thirteenth it had a deficiency of normal attachments and an unusual length and course for the twelfth. When the patient was well enough an attempt was made to count the ribs with the aid of the x rays and there appeared to be 13 and on three occasions endeavours were made to obtain a skiagraph but the negatives were failures. There was no fracture of this rib, but it could be moved inwards very freely. Importance was attached to this abnormality, as it is well recognised that the lower ribs play an important part in injuries of the kidney due to direct violence. The kidney can be ruptured by sudden muscular effort, as in jumping, but the specimen shows a clean division, such as one would expect from a sudden squeeze from the lowest rib, and the steering-wheel could not in this case have reached the kidney without pushing before it this abnormal lowest rib. There are many specimens in museums of lumbar ribs, but it could not be positively asserted that this was one.

The wound being now opened in its entire length and the peritoneum which was uninjured pushed forwards there issued a large quantity of blood and clots. The pedicle of the kidney was immediately seized by the fingers to control the hæmorrhage which was still occurring, when it was found that the organ was torn into two pieces. Amongst the larger clots which were turned out of the abdomen was the lower third of the kidney with a piece of the pelvis attached to it. It was recognised that any attempt to save the remaining portion by a plastic operation upon it was hopeless, especially considering the man's condition, so the pedicle was ligatured and the remainder removed. Mr. Jones endeavoured to free the retro-peritoneal space from the effused blood but it was not possible. The blood in these cases is not in an actual cavity but is incorporated with the cellular tissue and nothing save a scraping or cutting operation can remove it. The removal of the effused blood is an important detail, as the after-history of these cases shows that of those who survive the injury and the operation many die of sepsis or suppuration in some form. Now this sepsis, apart from infection at the time of the operation, may be due to extravasation of urine from the injured kidney. In cases such as this in which the kidney is so torn that it is probably past secreting, or in those instances where little if any urine has had time to be secreted, sepsis still appears. This infection is probably due to invasion of the blood clot by micro-organisms. Mr. L. S. Dudgeon and Mr. P. W. G. Sargent have in this year's Erasmus Wilson lectures[1] shown that such collections of blood are infected from within and they describe a bacillus commonly associated with such infection. The wound was plugged with sterilised gauze and closed for two-thirds of its extent.

[1] THE LANCET, Feb. 25th, p. 473, March 4th, p. 548, and 11th, p. 617, 1905.

On the next day there was a discharge of serum and a little blood. The serous discharge continued to come freely and gradually became thicker, so that on the sixteenth day it was to all appearance purulent. The incision healed by primary union where it had been closed and the patient's temperature kept normal all the time. The blood in the cellular tissue which could not be removed if infected was infected from within. The discharge was like that which one sees coming from a wound healing by granulation and the gauze plugging had left a large raw surface to heal in that manner.

The after-history was otherwise uneventful; the patient passed 35 ounces of urine the next day. On the sixth day he vomited once, probably because of his intense dislike to the milk diet. He was discharged six weeks after admission perfectly well except for a small sinus about an inch deep which soon healed outside the hospital. During his convalescence, and especially while the wound was being dressed, he often complained of pain in the left testis, thus reminding one of the well-known relationship between those two organs.

Remarks by Mr. JONES.—Cases of immediate nephrectomy for ruptured kidney are not common, the operation generally taking place some time after the injury to relieve an abscess or extravasation of urine. The first nephrectomy for ruptured kidney was performed by Dr. H. G. Rawdon at the Liverpool Infirmary for Children.[1] The operation was undertaken to prevent more blood entering the bladder from the right kidney which had been injured 17 days previously. Four days later a suprapubic cystotomy was performed to relieve the cystitis and to empty the bladder of foul clots which were endangering the child's life. Pyelitis and suppuration of the left kidney, however, caused the child's death 19 days later. The splitting of the pelvis of the kidney and the serious hæmorrhage in my case prevented an attempt being made to save the larger portion of the organ, otherwise partial nephrectomy and suture of the torn surface might have been attempted.

[1] THE LANCET, May 28th, 1883, p. 907.

CARDIFF INFIRMARY.

A CASE OF INTERSCAPULO-THORACIC AMPUTATION WITH REMOVAL OF A PORTION OF THE THORACIC WALL FOR RECURRENT CARCINOMA OF THE BREAST.

(Under the care of Mr. WILLIAM SHEEN.)

FOR the notes of the case we are indebted to Mr. J. Bowen-Jones, late assistant house surgeon.

The patient, aged 58 years, was admitted into the Cardiff Infirmary on Jan. 7th, 1905. She was sent by Mr. T. W. Thomas of Caerphilly. Nine years previously she was an in-patient under Dr. Alfred Sheen. Reference to the former notes showed that the left breast and one enlarged axillary gland were removed for carcinoma; the fascia was cleaned off the pectoral muscle. The date of the operation was Sept. 7th, 1895. The patient remained well until the beginning of December, 1904, when she noticed a lump in the left armpit. This grew larger, the skin over it broke and radiating pain appeared. She was losing flesh and slept badly.

On admission there was a large, hard, irregular mass in the left axilla with the skin red and thinned over it; in one place the skin was broken and a thin pus exuded. Part of the scar of the previous operation was bound down to the mass. The veins over the pectoralis major were enlarged. There was pain down the arm but no œdema of the arm. There was no evidence of growth elsewhere.

Operation was performed on Jan. 9th. After the patient had been anæsthetised with ether removal was attempted but was found to be impossible owing to the growth surrounding and involving the vessels and nerves in the axilla. A portion was removed and showed on section a honeycombed appearance, the interstices being filled with a thin pus. The wound was closed and healed well except at one spot where the discharge continued. On Feb. 14th a second operation (interscapulo thoracic amputation) was performed. The operation was commenced under a mixture of eucaine and adrenalin but after the skin incisions were partly made the patient complained so much of pain that a general anæsthetic (ether and later chloroform) was given. An incision was made along the clavicle, inclining downwards at its outer end to meet a vertical incision in the mid-axillary line. The clavicle was divided at the junction of its middle and inner thirds. Owing to the extension of the growth the subclavian vessels were tied high up, the dome of the pleura being exposed. The brachial plexus was freely dabbed with the eucaine and adrenalin mixture before being divided. When the chest wall was reached it was found that the growth infiltrated the second and third ribs with a portion of the intervening intercostal space, so a section of chest wall about four inches square was removed. The pleura was not invaded by growth but was opened, the lung collapsing. The patient was not at all affected by this. The collapsed lung was stitched to the margins of the wound in the chest wall and the whole skin wound was closed without drainage.

There was remarkably little shock after the operation. There was some dyspnœa for the first three days and oxygen was given. The wound healed throughout by primary union. The patient got up ten days after the operation and daily prophylactic x ray treatment was commenced. She left the hospital on March 18th and continued the x ray treatment as an out-patient. Microscopically the growth showed carcinoma with much degenerative change.

On April 10th the patient was readmitted with recurrence in the scar over the fourth rib. There was a hard nodule of growth about one inch in diameter adherent to the rib. Pus exuded from a sinus in the centre. Operation was performed on April 13th. The growth was removed with a portion of the underlying rib. Opening of the pleura and lung collapse again occurred without bad result. Primary union followed. The patient got up in ten days and was discharged on April 26th. She has continued the x ray treatment since and when last examined (middle of June) there was no evidence of recurrence.

Remarks by Mr. WILLIAM SHEEN.—There are several points of interest in this case. A long time, over nine years, elapsed between the first and second operations, although the first operation was not of the extensive character that is performed at the present time. This and other cases show that, although usually, it is not always the fact that the more extensive the operation the less the probability of recurrence. Was there a focus of growth in the tissues since the first operation, or did the growth reappear, the patient having been free from cancer in the interval? If the former, why did the growth remain dormant for nine years?

Passing to the operation itself it was a great disappointment to me to find the chest wall affected in the last stages of the operation. I looked upon the rib resection with the almost inevitable opening of the pleura and resulting collapse of lung as a somewhat desperate measure, but the patient was not particularly affected by these events; in fact, she twice survived them. To be quite up to date thoracotomy should be performed in a special chamber under reduced air pressure. Such a chamber has been devised by Sauerbach.[1]

The attempt to perform so extensive an operation under local anæsthesia was unsuccessful but the case showed that the eucaine and adrenalin mixture is of value in diminishing loss of blood at the time of, and shock after, the operation. I suggest such local anæsthesia as a preliminary to general anæsthesia in similar severe operations. Following the example of other operators, the local anæsthetic was applied to the brachial plexus before dividing it to prevent a marked increase in the pulse-rate, such as has been noted in other cases. Although a pyogenic infection was present in addition to the cancer, yet the extensive wounds healed by primary union. Possibly the patient was self-immunised to pus cocci.

[1] Meyer: Annals of Surgery, May, 1905.

BRISTOL GENERAL HOSPITAL.—The half-yearly meeting of the governors of the Bristol General Hospital was held on Sept. 11th under the presidency of Mr. Proctor Baker. The chairman stated that for the first six months of 1905 the average daily number of in-patients was 179·3. The financial statement was satisfactory. Additional accommodation for the nurses and new isolation wards are required; these extensions will entail an outlay of about £12,000 and it will be necessary for the governors to make an appeal for that sum.

Reviews and Notices of Books.

The Practice of Medicine: A Text-book for Practitioners and Students, with Special Reference to Diagnosis and Treatment. By JAMES TYSON, M.D., Professor of Medicine in the University of Pennsylvania and Physician to the Hospital of the University; Physician to the Pennsylvania Hospital. Third edition. With 134 illustrations, including coloured plates. London: Rebman, Limited. 1905. Pp. 1240. Price 24*s*.

IN our review of the first edition of this text-book, which appeared in the columns of THE LANCET of May 1st, 1897 (p. 1210), we commented favourably on the all-round manner in which Dr. Tyson had accomplished the task which he had set himself. The work is essentially a practical one, stress being laid on diagnosis and treatment, but due attention is also given to morbid anatomy, etiology, and symptomatology. The third edition has been brought up to date and numerous additions and changes have been made in various parts of the work, especially in that portion devoted to infectious diseases. This section is a very large one, occupying over 300 pages. In addition to a description of diseases usually classified as infectious, the following affections are also included under this heading: para-typhoid fever, syphilis, gonorrhœal infection, croupous pneumonia, broncho-pneumonia, chronic interstitial pneumonia, tuberculosis as affecting the various organs of the body, rheumatic fever, and "infectious diseases of doubtful nature," such as "Weil's disease," miliary fever, and glandular fever. The inclusion of croupous pneumonia and rheumatic fever amongst the infectious fevers is now becoming general, although some authors still prefer to consider them respectively amongst diseases of the lungs and diseases of the joints. We consider that the former malady should certainly be considered an infectious disease, and that rheumatic fever in the future will also be found to be such, although its bacteriology is not yet a matter of certainty.

An excellent account is given of typhoid fever and the pages devoted to the treatment of that disease will well repay careful study. Dr. Tyson speaks in highly favourable terms of the "Brand bath treatment," which he considers from his own experience and from that of other physicians to be the best that can be adopted. The cold bath treatment has been largely used in this country, but at present cold sponging is probably more generally employed. The Brand treatment consists of the cold bath in combination with massage. The patient is placed in a bath containing water at a temperature of 70° F. During the bath he is vigorously rubbed and is also encouraged to rub himself. A compress wrung out of ice water is kept upon his head or the head is sprayed with cold water from time to time. At the end of 15 minutes he is lifted on to the bed, the wet sheet is replaced by a dry blanket, and the patient is rubbed dry. None of the complications except hæmorrhage from the bowels is allowed to interfere with the carrying out of this treatment, neither is the menstrual period. It will be thus seen that the main difference between the bath treatment as practised in this country and as employed in America is that in the Brand method massage is considered an important therapeutical measure. We are not aware that the combination of bathing and massage has been extensively tried by English physicians.

The recent discoveries with regard to the mode of spread of yellow fever receive considerable attention. Dr. Tyson refers to the important results obtained by Dr. Reed and his colleagues in Cuba in 1900. These observers demonstrated that a mosquito—stegomyia fasciatus—serves as the intermediate host for the pathogenic parasite and that an interval of about twelve days or more after the insect has become contaminated appears to be necessary before the mosquito is capable of conveying the infection. It was further determined, according to the same authorities, that the fever is not conveyed by fomites; hence disinfection of articles of clothing, bedding, or merchandise supposed to be contaminated is not necessary. Further arguing from the above conclusions, a house may be said to be infected with yellow fever only when there are present within its walls contaminated mosquitoes capable of conveying the parasite of this disease. While the mode of propagation of yellow fever seems to have been determined definitely there is still much doubt as to whether the pathogenic organism has been discovered. The measures taken in certain of the affected districts to destroy the breeding-places of the mosquitoes and to render dwelling-houses proof against the ingress of these pests have had most satisfactory results. In the case of yellow fever, as with malaria, a great advance has been made in the prophylaxis of the disease.

The section dealing with diseases of the blood and blood-making organs has been brought fully up to date and a good account is given of the various forms of anæmia. The whole book is capitally written and forms an excellent text-book both for students and for practitioners.

Observations on the Filarial Embryos found in the General Circulation of the Equidæ and Bovidæ and their Probable Pathological Significance. By ALFRED LINGARD, M.B., M.S. Durh., D.P.H. Cantab., Imperial Bacteriologist to the Government of India. Fasciculus I.: Bur-ati (Part I.). With six charts, nine illustrations in the text, and 12 plates. London: Adlard and Son. 1905. Pp. 59. Price 2*s*. 6*d*. net.

IN his introduction to this as yet not much worked out subject Dr. Lingard details the results obtained by workers previously to his own researches—namely, those of Wedl in 1848, Sonsino in 1876, Takheinoff, reported by Lange in 1881, Massanti in 1880, and of Dempser. The author, who has enjoyed unusual opportunities in India for investigating the diseases of different animals, had collected a vast number of facts with reference to the latter, when a disastrous fire attacked his laboratory, occasioning the loss of all his microscopical preparations, photographs, and pathological specimens, and thus delaying the publication of this monograph. Undeterred by this severe misfortune Dr. Lingard has tried to replace as many as possible of the links required in the chain of evidence and the publication of this interesting research is the first result.

With regard to the equidæ Dr. Lingard examined microscopically some 400 equines, and the chief conclusions which he drew were (1) that the filaria embryos are always present in the peripheral circulation during the 24 hours; (2) that they are present in much increased numbers during the latter half of the day; (3) that a marked decrease or absence was noted during September; and (4) that the larval forms appear to possess the attributes of the embryos of filaria perstans and filaria nocturna. After detailing the symptoms found in equines when large numbers of filariæ are present in the circulation, the author proceeds to the description of the filaria embryos in the blood, their movements, general appearance, shape, sheath, dimensions, and numbers; their pairing and life-span are fully set forth. Next the habitat of the parent nematode is discussed and it is seen that the walls of the large arteries are generally the situations in which they are most commonly noticed. These nematodes are then described. The author also made some experimental inoculations of animals with blood containing large numbers of filaria embryos, but with negative result. Finally as regards the intermediary host, he examined hundreds of flies and mosquitoes with the result that larval forms closely resembling those

present in the blood of animals harbouring filaria were observed frequently, but unfortunately all these specimens were destroyed in the fire of 1899.

Next the researches on the bovidæ are detailed. The habitat of the parent filariæ is again found to be the large arteries, the common, anterior, and posterior aorta, other arteries being but seldom implicated. Some excellent plates exhibit this point. The nematodes are minutely described; the measurements of both the male and female worms are given, as also of the ova, their movements inside of the body of the host are described, and their longevity. The author finds that out of 100 necropsies on cattle from the plains at least 70 per cent. are affected, whereas in the hills only three cases were found in 2000 post-mortem examinations.

The concluding portion of this valuable monograph is occupied with the subject of bursati which is treated in a similar manner. A review of the work of previous observers is first given, then the experimental production of the bursati sore is described, and then the author supplies answers to many questions concerning anomalous conditions which before the light of our present knowledge were difficult to explain, concluding with the description of certain necropsies and the preventive and curative treatment. The work is illustrated by some beautiful plates.

A Text-book of Medical Chemistry and Toxicology. By JAMES W. HOLLAND, A.M., M.D., Professor of Medical Chemistry and Toxicology and Dean of Jefferson Medical College, Philadelphia. Fully illustrated. London, Philadelphia, and New York: W. B. Saunders and Co. 1905. Pp. 592. Price 15*s.* net.

CHEMISTRY is treated in this volume in so far as it relates to medicine and the author follows up his exposition of the chemical elements and compounds with a few sections on physiological and clinical chemistry, including a consideration of the digestive fluids of the body, bile, blood, milk, and urine. He has banished the usual classification into chapters, and on the contents page the references to the subjects are not under the headings of a chapter but against the number of the page on which the consideration of the subject is commenced—a plan that is quite satisfactory. But the work is distinguished sharply from the average text-book for a more important reason, the author realises the importance of recent developments in physical science in their relation to the various departments of medical study. These developments have led to fresh and wide fields of study and though it may not be possible to give in the scope of a medical text-book anything more than an outline of the principles involved we are glad to find that the author's determination has been to do so much. Hence an intelligent, if necessarily brief, presentation of the phenomena of cryoscopy, osmotic pressure, electric dissociation, and the ionic theory is given. It is frequently the excuse of writers of text-books of chemistry intended for the reading of medical students that these subjects have developed into special branches which call for little treatment, but we agree with the author of the present volume that not only should an indication of the principles be given but some exposition also of the results. As he points out, the discoveries of Arrhenius, van 't Hoff, and Ostwald have been the point of departure of the biological researches of Loeb and Pauli, and the medical studies of Koranyi, Hamburger, and Zikel. There can be little doubt that the progress of physiological chemistry will be very materially helped as a deeper insight into the phenomena of dissociation, mass action, and osmotic pressure is gained. There are excellent sections on water-supply, with a short account of the biological and chemical examination of water with the view to deciding its fitness for drinking purposes. The analytical directions are necessarily brief but to the point, while the biological procedure laid down presupposes a knowledge of the laboratory methods of bacteriology. The author rightly points out that the most significant facts about a water-supply are often obtained by inspection of the source and its surroundings. In regard to the sterilisation of water he says that water infected with typhoid germs may be sterilised without boiling or filtering by permitting it to stand in brightly polished copper vessels for four hours at the ordinary temperature, or for 24 hours in a refrigerator. Copper in the form of a colloidal solution in amounts harmless to man is stated to be a germicide to the typhoid and cholera bacilli, whence, by the way, some rather quaint therapeutics have sprung. The coloured illustrations and drawings of crystals, deposits, and so on, are cleverly done and should be of considerable assistance to the student carrying out a practical course. Altogether this is an excellent text-book of chemistry and toxicology for the medical student, since it presents to him just exactly the points and principles bearing upon medical science which it is necessary for him to appreciate.

Higher Mathematics for Students of Chemistry and Physics. Second edition. By J. W. MELLOR, D.Sc. London: Longmans, Green, and Co. 1905. Pp. 631. Price 15*s.* net.

WE welcome with pleasure this second edition of Dr. Mellor's work which was reviewed by us in 1902 on its first appearance. The book has been supplemented by some 88 pages and has been largely rewritten; a new chapter has been added on the Calculus of Variations and all the misprints in the first edition have been carefully corrected in the present volume. It contains, as we said before, just the kind of mathematics that is daily required in the laboratory by advanced students. There is in some minds an erroneous notion that the methods of higher mathematics are prohibitively difficult. Any difficulty that may arise is rather due to the complicated nature of the phenomena alone. As Dr. Mellor says: "Logic and mathematics are both mere tools by which the decisions of the mind are worked out with accuracy but both must be directed by the mind. I do not know if it is any easier to see a fallacy in the assertion that 'when the sun shines it is day; the sun always shines, therefore it is always day,' than in the statement that since $\left(\frac{5}{2}-3\right)^2=\left(\frac{5}{2}-2\right)^2$ we get on extracting roots $\frac{5}{2}-3=\frac{5}{2}-2$ or $3=2$. We must possess a clear conception of any physical process before we can attempt to apply mathematical methods. ..... After experiment, then mathematics. It is only after the different workers have collected data that the mathematician is able to deduce the required generalisation. Thus a Maxwell followed Faraday, and a Newton completed Kepler."

Berthollet in 1789 surmised that the speed of a chemical reaction was proportional to the amount of reagent present. This speculation in this form cannot be experimentally tested for the speed is not constant during any finite interval of time, as the amount of the reagent present is continually decreasing. If this surmise be expressed as a differential equation by the methods of integration the amount of reaction that takes place in a given time can be found. On p. 218 Dr. Mellor gives the experimental results in the hydrolysis of cane sugar—i.e., the amounts of invert sugar formed in measured intervals of time. We have here all the data for discovering the truth of Berthollet's speculation. It was in this way that Wilhelmy verified the hypothesis, so that it is now known as Wilhelmy's law.

On p. 122 Dr. Mellor does not describe the three dimensions of space in the way now usually adopted. He makes the OY axis project outwards from the plane of the paper, instead of inwards. But in this he is supported by no less an authority than Dr. Routh, so that it seems invidious to

criticise it, yet those who have worked with both systems of nomenclature will appreciate the superiority of the more modern method. A few trifling misprints may also be noticed; for instance, on p. 18 the reference to p. 154 should be 183; in the footnote on p. 151 PM should be PO; on p. 603 e is omitted in the expression for $\cos x$. A mistake occurs on p. 235, where "$x^2 = 2y$" should surely read "$x^2 = 4y$"; while on p. 250 the evaluations of the triple integrals should be 2580, 1550, and 1470 respectively.

In conclusion, we heartily recommend this work to all students of chemistry and physics who are anxious to follow in Wilhelmy's footsteps. We point out a few small slips with no idea of detracting from the large merits of the work.

LIBRARY TABLE.

The Brassworkers of Berlin and of Birmingham: a Comparison. Joint Report of R. H. BEST, Chairman of Best and Lloyd, Limited, Cambray Works, Handsworth, Chairman of the Gas and Electric Light Fittings Masters' Association, President of the Nelson-street Adult Early Morning School; W. J. DAVIS, Secretary of the National Society of Amalgamated Brassworkers and Metal Mechanics; and C. PERKS, canvasser and representative of the Birmingham Hospital Saturday Fund and member of the General Dispensary, Birmingham. London: P. S. King and Son. 1905. Pp. 116. Price 1*s.*—This work is a record, embodied in a report, of the impressions of the authors, from a physical and industrial standpoint, of the life led by the brassworkers of Berlin as compared with that of the same class in Birmingham. It must be confessed that a perusal of the report is not flattering to our self-esteem, for in the opinion of its compilers the brassworkers of Birmingham, so far as their industrial and physical life is concerned, do not compare favourably with those of Berlin. The scrupulous cleanliness of Berlin was a feature of the city which especially impressed its visitors from the Midland metropolis, who thought that Birmingham in this respect, with great advantage to itself, might take example by the Prussian capital. But they do not seem to have realised that Berlin is the Prussian capital and seat of the Court, whereas Birmingham is frankly a manufacturing city. The educational system of Berlin found great favour with the authors and they were much struck with the fact that they "saw no case of underfed, poorly clad, or untidy children, either in the streets or in the schools." The medical supervision of the schools of Berlin would seem to be very thorough and effective and the municipal poor guardians and societies assist sick, defective, or needy children in every possible way. With regard to the drink question in Berlin, the writers are of the opinion that the labouring classes there are more temperate than those of Birmingham and are able to procure much purer beer. On the whole, according to this report the condition of the workmen in Berlin is better than that of the Birmingham workmen. The book provides instructive reading and undoubtedly much may be learned from a study of the German mode of industrial living and methods of municipal government. At the same time the paternalism that is so evident throughout Germany in the treatment of its working classes is somewhat opposed to British ideals. A clean and healthy race may be evolved by such means, but it tends to destroy independence and self-initiative. While some of the German methods may be copied with advantage, the salvation of the British working classes must be worked out on lines more in keeping with the national character.

Simple Lessons on Health for the Use of the Young. By Sir MICHAEL FOSTER, K.C.B., M.P., &c. London and New York: Macmillan and Co., Limited. 1905.—In the preface to this little work the author states that the critical attitude he assumed towards a certain syllabus entitled "Lessons on Hygiene" provoked indignant comment in some quarters and protest from a distinguished abstainer who saw in Sir Michael Foster's strictures mere destructive criticism. Hence the appearance of the work under notice, in which Sir Michael lays down the more or less obvious rules of health for children, placing especial stress on the use, and the dangers of use, of alcohol, the treatment of which question in "Lessons on Hygiene" brought forth his earlier remarks. In the United States, as well as in this country, strong efforts have been made by extreme total abstainers to prove to children in elementary schools from a scientific point of view that the consumption of alcohol is hurtful in all and any circumstances. These views have been combated in the United States and a number of eminent scientific men there have gathered together in two elaborate volumes the opinions on the subject of authorities in all parts of the civilised world. Sir Michael Foster sets forth in plain and simple but expressive language, easily comprehensible to a child, the use and abuse of alcohol. In the chapter on food and drink the action and use of stimulants generally are explained and it is shown that the action of beer, like tea, may be likened to whipping a horse: "It does not give any fresh strength; it whips up the strength given by real food." It is further pointed out that "there are times when it is a good thing, or even a very necessary thing, to give even the very best, the strongest and most willing horse a touch of the whip." The injurious effects of drinking too much tea or alcohol are referred to in language as easily to be understood by a child as the foregoing, and the fact is strongly emphasised that young people unless they are ill ought not to take any alcoholic drink at all. The chapter on food and drink is conceived and expressed in a rational and common-sense manner, is in a high degree adapted to a child's comprehension, and calculated to convey a proper impression concerning the subject. The other chapters of the book deal with fresh air, light and cleanliness, and are excellently clear expositions of their subjects. Sir Michael Foster, in our opinion, has done good service by publishing this little volume.

The Historical Relations of Medicine and Surgery to the End of the Sixteenth Century. An address delivered at the St. Louis Congress in 1904 by T. CLIFFORD ALLBUTT, M.A., M.D. Cantab., Hon. M.D. Dub., Hon. LL.D. Glasg., Hon. D.Sc. Oxon. and Vict., F.R.C.P. Lond., F.R.S., F.L.S., F.S.A., Regius Professor of Physic in the University of Cambridge, Fellow of Gonville and Caius College, Honorary Fellow of the Royal College of Physicians of Ireland and of the New York Academy of Medicine. London and New York: Macmillan and Co., Limited. 1905. Pp. 125. Price 2*s.* 6*d.*—This book contains the address dealing with the outward relations of inner medicine delivered by Professor Clifford Allbutt before the Medical Congress held at the St. Louis Exposition. In sketching the historical relations of medicine and surgery the author has confined himself to ancient and mediæval times. It is pointed out—a fact which in the present age is too often lost sight of—that to the student of Greek medicine the separation of surgery from medicine seems as false in notion as in practice it has been pernicious. Professor Allbutt is of the opinion that "the hour has come to amalgamate medical institutions and customs, to establish an Academy of Medicine every member of which shall be free to develop his faculties in whatsoever honourable paths they may lead him, and formally to recognise an integration which in spite of custom, in ophthalmology, dermatology, gynæcology, has established itself before our eyes." The address itself is well worthy of the reputation of Professor Allbutt as a writer of clear and expressive English and presents

a vivid and instructive word-picture of the historical relations of medicine and surgery in ancient and mediæval times. In regard to Ambroise Paré the author takes occasion to correct a common misapprehension as to the invention of the ligature and draws attention to the fact that Paré did not invent the ligature but improved it to such an extent that he was able to perform amputations successfully without the aid of boiling oil and a red-hot knife. At the close of his address the author shows that up to the time of Avicenna medicine was one and undivided and that in the divorce the physician has been by far the greater loser; he urges that medicine and surgery should again go hand in hand.

Scientific Memoirs by Officers of the Medical and Sanitary Departments of the Government of India: On a Parasite found in Persons suffering from Enlargement of the Spleen in India (Third Report). By Lieutenant S. R. CHRISTOPHERS, M.B., Ch.B. Vict., I.M.S. Calcutta: Office of the Superintendent of Government Printing, India. 1905. Pp. 14. Price 10 annas (or 1s.).—In this memoir Lieutenant Christophers deals with the development undergone by the parasite in citrated blood at a low temperature. The correct zoological position of the organism is at present extremely uncertain; it may be a piroplasma according to Laveran, Mesnil, and Major C Donovan, I.M.S.; a trypanosome according to Major W. B. Leishman, R.A.M.C., Marchand, and Ledingham; or a protozoon according to Major Ronald Ross and others. Captain L. Rogers, I.M.S., has stated that by adding blood from cases of splenomegaly caused by the parasite to sterile citrate of sodium solution he has observed the development of the parasites in question into trypanosomes. This observation was thought to confirm the view of their trypanosomic nature, but Lieutenant Christophers points out that the bodies of Rogers differ considerably from the ordinary trypanosomes found in animals in possessing no undulating membrane, in the position of the micro nucleus or centrosome at the end of the parasite, and in the flagellum passing out of the parasite directly from the micro-nucleus. Captain Rogers appears to have been the only observer who has described the extra-corporeal development of these bodies. In this memoir Lieutenant Christophers gives an account of the technique employed by this observer and portrays the two types of development noted by him. His own experiments enable him to state that in the main he agrees with Captain Rogers's results; but he has observed certain further appearances not described by him which appear to take place at a later date. In one particular, however, he failed to confirm Captain Rogers's observations, in that he was unable to accept his conclusions regarding conjugation of the large forms. Captain Rogers noted large forms on the second day and flagellate forms on the third day. He did not note any further changes than those seen on the fourth day, which corresponded to those obtained by Lieutenant Christophers on the fifth and sixth days. The author of this memoir found that the formation of masses of pear-shaped and irregular forms was the chief feature in the process of development from the ninth day. The account is illustrated by some excellent plates.

JOURNALS AND MAGAZINES.

Dublin Journal of Medical Science.—In the August number Mr. E. H. Bennett treats of fractures of the first costal cartilage and defends himself against the aspersion that the case in which he originally described this form of injury was in reality an instance of dislocation of a joint formed in the ossified cartilage. His paper is founded upon no less than six specimens of this injury which were shown to the Section of Pathology of the Royal Academy of Medicine in Ireland. Dr. George Peacocke reports the occurrence of Hodgkin's disease in twins and Dr. Walter Charles Oram deals with the treatment of ringworm of the scalp by means of the x rays. An article by Dr. Alexander Hammett Marks gives an account of a recent epidemic of dengue in Brisbane but unfortunately throws no new light upon the pathology of this disease which has been attributed by one observer to a special hæmatozoon. Under the heading of "Medical Miscellany" an interesting account is given by Dr. John Knott of the mediæval scientist, van Helmont.

SCHOLARSHIPS AND PRIZES AT THE METROPOLITAN MEDICAL SCHOOLS FOR THE YEAR 1904-05.

Charing Cross Hospital.—Epsom Scholar, L. H. Taylor; Livingstone Scholar, C. J. Fox; Huxley Scholar, H. F. L. Hugo; University Scholars, C. Beards, W. D. Keyworth, and T. W. Wade; Governors' Clinical Gold Medal, T. Stordy; Llewellyn Prize, Certificate, and £25, W. W. D. Chilcott; Pereira Prize, Certificate, and £5, W. D. Keyworth; Huxley Medal with prize of £10, R. H. H. Jolly; Golding Prize, Certificate, and £10, L. M. Webber; Practical Chemistry, prize, C. J. Butler; Midwifery, prize, W. K. Beaman; Pathology, prize, W. K. Beaman; Public Health, prize, R. K. Shepherd; Therapeutics, prize, J. W. Heekes; Forensic Medicine and Toxicology, prize, W. K. Beaman; Materia Medica, prize, T. W. R. Strode; Anatomy (senior), prize, R. H. H. Jolly, ditto (from lecturer), W. E. Wilks, æq.; Anatomy (junior), prize (Steadman), L. M. Webber; prize (School), W. D. Southern; Biology, prize, C. J. Fox; Chemistry, prize, G. Whittington; Physiology (senior), prize, R. H. H. Jolly; Physiology (junior), prize, L. M. Webber; Medicine (senior), prize, L. E. M. Smith; Medicine (junior), prize, W. S. Fenwick; Surgery (senior), prize, W. W. D. Chilcott; Surgery (junior), prize, W. S. Fenwick; Practical Medicine, prize, W. S. Fenwick; Psychological Medicine, prize, W. W. D. Chilcott; Ophthalmology, prize, E. C. Sprawson; Practical Midwifery, prize, A. K. Taylor.

Guy's Hospital.—Open Scholarships in Arts: Geoffrey Dunderdale, Clifton College, £100; William Henry Catto, Royal College, Mauritius, £50; and Marc Antoine Emile Duvivier, Royal College, Mauritius, certificate. Open Scholarships in Science: Charles Albert Wood, Guy's Hospital, £150; Guy Fleetwood Haycraft, Guy's Hospital, £60; and Hugh Braund Kent, the Northern Polytechnic, certificate. Scholarship for University Students: Patrick Playfair Laidlaw, B.A., St. John's College, Cambridge, £50. Open Scholarships in Dental Mechanics: October, 1904, John Richard Doren Ditch, £20; May, 1905, William Francis Boxall, £20. Junior Proficiency Prizes: Harry Archibald Sanford, £20; Arthur Norman Leeming, £15; Vincent Townrow, £10; and William Johnson, certificate. The Michael Harris Prize for Anatomy: Gilbert Francis Syms, £10. The Wooldridge Memorial Prize for Physiology: Harry Archibald Sanford, £10; and Leonard Tilsley Baker, certificate. The Hilton Prize for Dissections: Edward Leslie Martyn Lobb, £5. The Arthur Durham Prizes for Dissection: first year's students: Hugh Braund Kent, £5; and George Dunlop Martin, certificate. Senior students: Edward Leslie Martyn Lobb, £15; and Harry Archibald Sanford, certificate. Dental Prizes: first year's students: Harold Todd Reeve, £10; and Frank Maurice Holborn, certificate; Horace Edmund Marsh, certificate. Second year's students (1904): Arthur Alan Forty and James William Mawer, equal, £7 10s. each. Practical Dentistry Prize: Fritz Julian Messer, £10. The Golding-Bird Medal and Scholarship in Bacteriology: Edwin Walter Routley, £20.

London Hospital.—Price Scholarship in Science, £120, A. H. Penistan; Price Scholarship in Anatomy and Physiology, £60, R. B. Lloyd; Entrance Science Scholarships, £60, C. I. Wright; £35, R. Candy; honorary certificate, E. B. Morley. Buxton Scholarships—Arts, £30, D. Mallam; £20, F. C. Tibbs. Epsom Scholarship, J. P. Little. Clinical Medicine, £20 scholarship, H. L. Tidy and A. J. Walton, æq. Clinical Surgery, £20 scholarship, A. J. Walton. Clinical Obstetrics, £20 scholarship, C. T. Scott; honorary certificates, J. E. Adler and H. Gooch. Duckworth Nelson Prize, biennial, £10, A. J. Walton. Andrew Clark Prize, biennial, £26, awarded 1904. Letheby Prizes, senior £10 each, W. S. Wildman and A. F. Evans; honorary certificates, F. N. H. Maidment, W. H. Parr, and W. J. O'Donovan; junior £10, H. Neame; honorary certificate, E. H. Rainey. Sutton Scholarship, £20 scholarship, H. L. Tidy. Hutchinson

Prize, triennial, £40, H. Balean. Anatomy and Physiology, £25 scholarship, T. H. C. Benians and R. B. Lloyd, æq.; honorary certificates, C. E. Zundel, J. Parkinson, H. D. Thomas, D. G. Evans, and W. H. Palmer. Anatomy and Biology, £20 scholarship, Stanley Boyd; honorary certificates, A. H. Penistan and E. B. Morley. Minor Surgery Prizes (not awarded). Practical Anatomy, £6 prize, E. B. Morley; £4 prize, S. Boyd and A. H. Penistan; honorary certificate, A. T. Brown. Anderson Prizes: prizes, C. T. Scott, H. E. Jones, R. C. Roberts, C. E. Zundel, P. A. Bahr, and A. R. Jordan; honorary certificates, T. B. Bartlett, L. J. Austin, and S. J. A. Beale. Douro Hoare Prize, £5, E. B. Morley; honorary certificates, H. Penistan, S. Boyd, and N. F. Sinclair.

London (Royal Free Hospital) School of Medicine for Women.—Prizes: Physics (Preliminary Science), H. G. Morland and C. M. Peake (divided); Inorganic Chemistry (Preliminary Science), I. N. Clough; Practical Chemistry (Preliminary Science), 1903–04, E. C. Eaves; Practical Inorganic Chemistry, M. M. Basden; Organic Chemistry (Preliminary Science), E. Warren; Practical Organic Chemistry, E. C. Goodison; Biology (Preliminary Science), 1903–04, A. B. Walsh; Biology (Preliminary Science), 1904–05, F. M. Edmonds; Anatomy (Junior), A. B. Walsh; Anatomy (Senior), first, K. Brown, second, E. M. Walters and M. V. Webb (divided); Practical Anatomy, first, M. V. Webb, second, M. Wild; Physiology (Junior), B. P. Lindup; Physiology (Senior), K. Brown; Practical Physiology, R. Jordan; Histology and Practical Histology, F. M. Morris; Materia Medica, Junior, E. M. Walters; Medicine, S. C. E. Sommer; Surgery, O. B. Smith; Gynæcology, first Durham Prize, E. Bolton, second, H. N. Payne; Midwifery, S. C. E. Sommer; Operative Midwifery, Evans Prize, R. Western; Pathology (Theoretical), L. R. H. Davy, (Practical), E. Bolton; Ophthalmic Surgery, E. Bolton. Scholarships: Entrance, £30, E. M. Morris; St. Dunstan's Medical Exhibition, given by the governors of the St. Dunstan's Educational Foundation, £60 a year for five years, M. Muncey; Mackay Prizes, £20 each, October, 1904, first, E. R. Griffiths, second, E. H. Lepper; Mabel Webb Research Scholarship, £30 a year for two years, 1903, J. E. Lane-Claypon; Bostock Scholarship (University of London), £60 a year for four years, 1903, E. M. Walters.

Middlesex Hospital.—Class Prizes:—Practical Pharmacy, H. G. Alexander; Histology, G. Fryer; Chemistry, H. D. Grant; Biology, R. W. Annison; Chemistry (preliminary science), 1st, R. W. Annison, 2nd, G. O. Teichmann; Physiology, C. H. S. Webb; Practical Anatomy, C. H. S. Webb; Anatomy, C. H. S. Webb; Pharmacology, W. Gilliatt; Pathology, E. L. Kennaway; Bacteriology, H. W. Acton; Forensic Medicine and Public Health, M. L. Hine; Psychological Medicine, P. C. Conran; Practical Midwifery, M. L. Hine; Practical Surgery, M. L. Hine; Practical Medicine, E. L. Kennaway; Surgery, M. L. Hine; Medicine, M. L. Hine; Second Year's Exhibition, C. H. S. Webb; Leopold Hudson Prize, H. W. Acton; Lyell Medal, R. E. Pitts; the Governor's Prize, W. D. Hartley; Prox. Acct., S. Barradell-Smith; Hetley Clinical Prize, H. W. Acton; Freeman Scholarship, H. W. Acton; Broderip Scholarship, 1st, H. W. Acton, 2nd, W. D. Hartley and R. E. Pitts, æq.

St. George's Hospital.—William Brown £100 Exhibition, F. W. Higgs; Brackenbury Prize in Medicine, E. H. B. Oram; Brackenbury Prize in Surgery, E. H. B. Oram; Webb Prize in Bacteriology, J. S. C. Douglas; the Treasurer's Prize, H. A. Browning; Sir Benjamin Brodie's Clinical Prize in Surgery, D. W. Roy; the Henry Charles Johnson Prize in Anatomy, F. Brachi; Sir Charles Clarke's Prize, G. E. Friend; Prize for Proficiency in Chemistry, Physics, and Biology, E. Coplans; Prize for Proficiency in Anatomy, Physiology, Histology, and Physiological Chemistry, J. Leighton Houlton; Prize for Proficiency in Anatomy, Physiology, and Organic Chemistry, B. Cohen.

St. Mary's Hospital.—Open Scholarships in Natural Science, £145, W. L. Cowardin, £52 10*s.* each, E. W. Archer, A. B. Porteous, and T. A. F. Tyrrell; University Scholarships, £63 each, C. H. Rothera, B.A. Cantab., and K. A. Lees, B.A. Cantab. General Proficiency Scholarships—Anatomy, Physiology, and Histology: A. Fleming; Midwifery, Pharmacology, Pathology, and Medical Jurisprudence: G. S. Thompson; Medicine, Surgery, Operative Surgery, Hygiene, and Mental Diseases: V. Z. Cope, B.A. Special prizes—Clinical Medicine, E. T. H. Davies and G. S. Thompson (æq.); Clinical Surgery, G. E. Peachell, H. E. Kitchin, B.A., and V. Z. Cope, B.A.; Ophthalmology I., V. Z. Cope, B.A.; II., C. I. Graham; Dermatology Prize I., V. Z. Cope, B.A.; II. (not awarded); Prosectors of Anatomy, D. W. Daniels and H. L. Barker. Summer session prizes, 1904.—Hygiene, V. Z. Cope, B.A.; Midwifery, E. T. H. Davies; Medical Jurisprudence, G. S. Thompson; Materia Medica and Pharmacology, A. Fleming; Psychological Medicine, V. Z. Cope, B.A.; Chemistry and Physics, J. L. Waller; and Organic Chemistry, A. Fleming. Winter session prizes, 1904–05.—Medicine (not awarded); Surgery, G. S. Thompson; Pathology, A. Fleming; Practical and Operative Surgery, T. E. Francis; Anatomy (senior), D. W. Daniels; Physiology (senior), D. W. Daniels; Anatomy (junior), A. B. Porteous; Physiology (junior), E. W. Archer; Biology, T. Hare and H. H. Tanner, æq.

University College.—Faculty of Medicine, Winter Session, 1904–05. Entrance Scholarships—Bucknill Scholarship (£30 per annum for four years), H. L. Tasker; Intermediate Medical Course (£63 scholarship), A. R. S. Alexander; Final M.B. Course (£84), Otto May, H. C. Samuel. Atkinson-Morley Surgical Scholarship (£45 per annum for three years): H. T. Mant. Atchison Scholarship (£55 per annum for two years): S. A. Owen. Cluff Prize (£15): W. E. Haigh. Erichsen Prize: E. D. Whittle. Pathological Anatomy and Bacteriology—Second class: G. Wray Sudlow. Physiology—Senior class: gold medal, F. J. F. Barrington; silver medal, W. E. Haigh; certificate, 3*, E. N. Cook. Second class: E. M. Cowell, E. K. Martin, and Norman Prescott. Third class: Percy Annett, F. C. Shone, J. G. Owen, M. Cohen, and F. G. Sergeant. Junior class: silver medal, S. H. Wood. Second class: R. L. Crabb, D. Kennedy, R. W. W. Vaughan, F. M. R. Walshe, and R. N. Woodsend. Third class: H. G. Janion, R. B. Phillipps, and H. L. Tasker. Practical Physiology—Senior class: silver medal, E. N. Cook; certificates, 2*, W. E. Haigh; 3*, E. M. Cowell, E. K. Martin, and F. J. F. Barrington. Second class: Norman Prescott and J. G. Owen. Third class: F. G. Sergeant and M. Cohen. Anatomy—Senior class: gold medal, E. N. Cook; silver medal, W. E. Haigh. Second class: F. J. F. Barrington and E. M. Cowell. Third class: J. G. Owen and E. K. Martin. Junior class: silver medal, D. Kennedy; certificate, 2*, R. N. Woodsend. Second class: R. L. Crabb, F. M. R. Walshe, and R. W. W. Vaughan. Third class: H. G. Janion. Medicine—Second class: H. R. Evans and L. F. Hirst. Third class: E. J. Sunnucks and A. C. Watkin. Surgery—Second class: H. R. Evans and L. F. Hirst. Clinical Surgery: Liston gold medal, J. B. Howell. Clinical Medicine—Senior class: Fellowes gold medal, T. L. Evans; Fellowes silver medal, J. A. Watt; certificates, 3*, L. F. Hirst; 4*, H. C. Semon and A. C. Watkin; and 6*, H. R. Evans. Junior class: Fellowes silver medal, H. C. Samuel; certificates, 2*, Otto May and D. C. Taylor; 4*, E. J. Price; 5*, J. Appleyard; 6*, W. H. King; and 7*, D. Embleton. Summer session, 1904–05. Pathology: certificate, 1*, A. S. MacNalty. Third class: G. Wray Sudlow. Medical Jurisprudence: gold medal, G. Wray Sudlow; certificate, 2*, A. E. Evans. Histology and Practical Histology—Second class: A. R. S. Alexander and F. M. R. Walshe. Third class: C. W. Morris and R. N. Woodsend. Therapeutics—Third class: G. Wray Sudlow. Hygiene—Second class: G. Wray Sudlow and T. L. Evans. Clinical Medicine—Senior class: Fellowes gold medal, G. Wray Sudlow. Junior class—Fellowes silver medal, Herbert Hawker; certificates, 2*, Frank Clayton; and 3*, J. H. Farbstein. Second class: H. C. Colyer, N. K. Foster, and O. Marshall. Third class: J. J. Suckling. Ophthalmic Medicine and Surgery—Second class: C. W. Gittens. Midwifery—Senior class: gold medal, A. Randle; silver medal, F. S. Rood; certificate, 3*, J. R. Foster. Second class: R. Bruce Low and T. L. Evans. Third class: A. E. Evans. Junior class—silver medal: E. J. Price. Pharmacology—gold medal, W. E. Haigh; certificates, 2* æq., E. M. Cowell and R. L. Crabb; certificates, 4* æq., H. S. Furness and J. G. Owen. Third class: N. Prescott.

* Obtained the number of marks qualifying for a prize.

Westminster Hospital.—Scholarships.—Epsom, 110 guineas, K. F. R. Davison; in Arts, £60 G. F. Rigden; Natural Science, £60, B. W. Brown; University, £40, R. W. Ironside; Science, £40, A. O. Mitchell; in Arts, £40, C. R. Dudgeon; in Arts, £30, A. H. Evans; in Arts, £30, G. A. E. Kelman; Governors', £40, W. R. Asplen; and Epsom, 110 guineas, A. H. Platt. Prizes.—Practical Chemistry, S. S. M. Wood; Midwifery, F. M. W. South certificate, C. Fletcher; Histology, E. G. Foote—certificate, J. A. B. Hicks; Treasurer's, H. Hingston; Pathology, C. Fletcher; Pharmacology, J. A. B. Hicks; "Bird" Medal and Prize, £14, J. J. W. Evans—certificate for "Bird" examination, J. W. L.

Scott; Medicine, J. J. W. Evans; Anatomy, G. F. Carr; Physiology, G. R. Strong; and Surgery, J. J. W. Evans.

THE NEW SYDENHAM SOCIETY.

THE forty-seventh annual meeting of the New Sydenham Society was held at Leicester at the meeting of the British Medical Association when the chair was taken by Mr. Henry Power in the unavoidable absence of the President, Professor William Osler. The report for the year 1904 was read. The subjects illustrated in the atlas were enumerated in the report and it was also announced that the income for the coming year would allow of the publication of a printed volume of selected essays, partly from German sources, which would include, among other subjects, the original papers announcing the discovery of the parasite of syphilis. The decision of the council to allow members to select one volume annually from the society's back stock without payment and the appointment of Dr. Alfred E. Russell as acting secretary were also announced.

In reply to questions by Dr. R. H. COOMBS and Dr. FURLONG as to the likelihood of an appendix to the lexicon being issued the CHAIRMAN pointed out that although a large amount of material had been already accumulated the funds of the society would not allow of its issue, at any rate for the present.

Mr. JONATHAN HUTCHINSON drew attention to the fact that the society, which had for several years issued only its clinical atlas, was likely in the future to revert somewhat to its original function in the translation and publication of printed volumes. These volumes, however, would not be large works but would consist of short selected monographs bearing upon the principal questions of the day. An annual volume of this kind might be made to supply the best and most recent information on the topics contained and could be issued promptly. The "Atlas of Clinical Medicine" would still be its principal work and four fasciculi would be issued each year. In addition to these members would receive the annual volume and would further be entitled to select each year a volume from the society's stock in hand. In offering this the council was making liberal arrangements and he earnestly hoped that members would endeavour to increase the scope and membership of the society. He would appeal to the younger and more active members of the profession on the plea that the atlas and the annual volume would deal with practical topics and would illustrate the foremost and most original views respecting them. The selection of subjects for illustration was decided by a large "atlas committee." It was not true, as had been suggested, that the atlas had dealt chiefly with rare affections and recondite speculations; it had already, amongst a host of other subjects, devoted much attention to syphilis, to the effects of arsenic, to fractures and dislocations, to drug eruptions, and was now dealing with eruptions due to the bites of insects. It could not be asserted that these were subjects with which the family practitioner was not concerned. The atlas was, indeed, he ventured to assert, a work which every practitioner would do well to have constantly at hand. To those members of the profession who had earned the right to rest he would make appeal on other grounds. They might suitably subscribe in the capacity of patrons and in recognition of the fact that the society was doing good work for the advancement of medical science.

The officers for 1905–06 were then elected. Professor William Osler is the President, Mr. Henry Power is the treasurer, and Mr. Jonathan Hutchinson and Dr. Alfred E. Russell are respectively the honorary and the acting secretary. There are 17 vice-presidents and 33 members of council. The committee in charge of the Clinical Atlas comprises the following: Dr. J. Michell Clarke (Bristol), Dr. C. J. Cullingworth (London), Mr. J. Hall-Edwards, Dr. John Fawcett (London), Dr. T. Colcott Fox (London), Dr. G. A. Gibson (Edinburgh), Dr. Gilchrist (Baltimore, U.S.A.), Dr. Goodall, Dr. Grey, Mr. R. Marcus Gunn (London), Dr. Arthur J. Hall (Sheffield), Dr. G. E. Herman (London), Dr. Arthur C. Latham (London), Dr. Cuthbert Lockyer (London), Dr. George R. Murray (Newcastle), Mr. Rushton Parker (Liverpool), Mr. D'Arcy Power (London), Mr. W. G. Richardson (Newcastle), Dr. H. D. Rolleston (London), Mr. S. G. Shattock (London), Dr. E. Stainer (London), and Dr. Unna (Hamburg).

The CHAIRMAN, in replying to a vote of thanks, laid great stress on the invaluable work which Mr. Hutchinson had done and was doing for the society.

Looking Back.

FROM

THE LANCET, *SATURDAY*, Sept. 22nd, 1827.

Again I say, then, that we must look to the *history* of the lithotomy, and the different methods that have been employed in operating, under this notion, that if we do not, we will be trifling about inventing little matters that have been invented, and tried long ago. Even if a man is to exercise his own ingenuity, and be a dexterous operator, he had better do that on the ground on which others have done it before him, than trust to his own ingenuity; therefore, I should conceive that it would be best suited for this place, since we cannot have the subject in demonstration before us, to consider what is the most successful and easiest mode, by alluding to the history of this operation.

Well, then, the course of operating seems to have begun at a period very far back, but even at the time of the Romans, in the works of Celsus, we can trace it. It seems of little consequence whether Celsus was really a surgeon, or an amateur; whether he operated, or whether he merely hung over the surgeon and described what was to be done; but we are bound to notice, in particular, the manner of the instruments, and particularly those of the Romans, as described in the books of Celsus. This operation was sometimes called *Lithotomia Celsiani;* it has also been termed the operation minor, meaning the simplicity of the operation; and indeed the whole of the instruments used seem to have been a *hook* and *knife*. And it is described, that the patient was ordered to jump and move sharply about to get the stone down; then to be taken into the hands of the assistants, who were to hold him down by the shoulders, pull up his legs, bring forward his breech, and keep him in that position; then it is described that the operator thrust his two fingers into the rectum, and if he felt the stone in the bladder, he could lay hold of it with his fingers, bring it forward into the perinæum, shake it from its position, bulge and project it into the perinæum, and when he had done so, then you can imagine how rapidly the operation must have been performed. He makes a first incision, which has puzzled the commentators of the day; it is a transverse, a semi-lunar transverse incision, and the finger pressing on the stone causes it to keep prominent and bulging, and he cuts on in a transverse semi-lunar manner through the integuments again and again, until the stone falls into his sleeve. Now, you will say, is it possible that the stone can be so caught? Is it possible to catch it with the fingers and bring it back? Now that I can assure you of, because I have myself operated in this way on boys, and at any time, in the dead subject, you will find by sounding. Suppose you open the bladder in the dead body, and put a stone into it, you then put the fingers into the rectum, and passing the sound into the bladder you can bring the stone forward, and by keeping the fingers in the rectum you cut directly upon it. This is not the operation then which may be performed on boys only, but the operation may be performed on adults also; and here I have to confess to you, that the first operation I performed was in this way, and to save the urethra I brought the stone forward with my finger in the rectum, and cut directly upon it until it came into my hand. It so happened that the operation was successful, and that it was repeated you can easily conceive; it was repeated, but I am bound to tell you, that I was more afraid of what I had done after I had succeeded in extracting the stone than I was before; for this is one of the instances in which I conceive it to be my bounden duty to express to you that we ought not to go groping about doing ingenious things from our own dexterity, and that our experience is not to be compared with what we have in history, for when we have heard of lithotomists cutting thousands, and when we have the experience of men fairly detailed to us who have cut their thousands, we ought to be very cautious indeed of pretending to put into competition with that experience our own ingenuity; and I thought, when I was operating, that the rule was not to cut the neck of the bladder in lithotomy. Now I did not cut the neck of the bladder, and it was a miracle the patient did not die.[1]

[1] Excerpt from "Lectures on Surgery, at the Royal College of Surgeons, by Professor C. Bell. Lecture VIII. On Lithotomy."

THE LANCET.

LONDON: SATURDAY, SEPTEMBER 23, 1905.

The Epidemic of Small-pox at Dewsbury.

IN an article in THE LANCET in 1898[1] a quotation was made from the *Vaccination Inquirer* which, a few months after the Royal Commission on Vaccination was appointed, had written as follows: "Halifax, which has so strangely lagged behind, is about to come into line with Keighley, Dewsbury, Bradford, Leicester, Oldham, Gloucester, Falmouth, and other towns where vaccination has been left optional." Our article then proceeded to point out that before the Royal Commission had concluded its sittings necessity had arisen to obtain reports regarding outbreaks of small-pox in no less than six of the eight towns mentioned by the *Vaccination Inquirer*. Leicester, which had an historic outbreak in 1892-93, has again suffered from small-pox, this time to the extent of over 700 notified cases, notwithstanding very active vaccination of "contacts," and now the Dewsbury union also has had another visitation. The total cases in the union have amounted to over 1300, but, unfortunately for reporting as well as for administrative purposes, several different sanitary authorities have been concerned in the outbreak, so that, up to now, no complete account of the epidemic has been published. In December last Dr. S. W. WHEATON of the Local Government Board reported on the epidemic at the stage which it had reached in October. He pointed out how seriously the board of guardians was neglecting its duties with regard to vaccination and how defective was the administration of the union in various respects. Following his report the Local Government Board, instead of spending more time in endeavouring to compel the guardians actively to administer the Vaccination Acts, issued an Order empowering certain of the sanitary authorities to establish vaccination stations and to make special medical appointments with the view to check the progress of the epidemic. The measures taken under the Order proved very successful. The cases quickly diminished and the epidemic came to an end early in the present year. It is to be hoped that the Board will again send Dr. WHEATON to Dewsbury in order to make a complete report on the whole course of the epidemic throughout the union.

Meanwhile, so far as the borough of Dewsbury itself is concerned a very useful report has been prepared by Dr. J. SPENCER LOW who was medical officer of health during the later part of the epidemic, and at the same time Dr. E. MAYNARD ASHCROFT, the medical officer of the small-pox hospital, has reported on the hospital and the cases treated in it, these including a number from outside the borough. The population of the borough in 1904 is estimated at 27,502. In 1891-94, when small-pox last prevailed in it, the total notified cases were 312, with 63 deaths. In the recent epidemic, including the two years 1903-04 and the first quarter of 1905, the notified cases were exactly 700 and the deaths were 68, so that, as has also been the experience of Leicester, the later outbreak, while of a milder type, has attacked twice as many persons as the earlier one. Dr. WHEATON'S report indicated an extraordinary degree of practical disbelief by the Dewsbury population in the dangers of small-pox and in the value of vaccination. It is probable that this may have been partly due to the influence of a well-known opponent of vaccination, a vice-president of the National Antivaccination League, who, as chairman of the board of guardians, made a speech reported at much length in the local press, in which he tried to alarm the public by the wild suggestion that vaccination is probably a cause of the increase of cancer in England. As recorded by Dr. LOW, disbelief in the infectivity of small-pox expressed itself, for example, in the visitation of invaded houses by neighbours and friends and in the clandestine removal of infected bedding so as to avoid disinfection. Quite a number of cases of the disease were concealed or not notified. In presence of the great spread of the disease in this very incompletely vaccinated community, lulled into a false feeling of security, the public health staff was at one time unable to maintain sufficiently complete observation of "contacts," and in some cases disinfection was not thoroughly performed. For the same reason the hospital became overcrowded and had to be extended. In addition to all this there is the fact, already noted, that the Dewsbury union is not under uniform sanitary control, there being more than half a dozen different administrative areas.

Confining our attention to the statistics of 1904, the total cases of small-pox appear as 552, the total number of infected houses being 373. One case occurred in each of 280 houses and in the other 93 invaded houses the cases ranged from two to eight. At an inspection of the elementary schools instituted in November it was found that of 3762 children there were 1191 unvaccinated and 2571 vaccinated. The unvaccinated minority included 73 children who were ascertained to have had small-pox in this epidemic or previously. The corresponding contribution by the vaccinated majority was only three cases and in each of these three an interval of more than ten years had elapsed between vaccination and the attack of small-pox, whilst one of the three showed no marks of the operation. Had the vaccinated been attacked as the unvaccinated were in proportion to their numbers instead of three cases Dr. LOW points out that there would have been 157, and this, be it noted, in a town where vaccination had for many years been practically optional, so that the unvaccinated were not a weakly class, exempted because of ill-health, temporary or permanent. The effect of the school visitation and of subsequent communication with parents appears roughly to have been that now the unvaccinated are reduced to about 20 per cent., and Dr. LOW holds that if another epidemic were to occur it would be a matter of no great difficulty to get this percentage much further reduced. As regards the total Dewsbury population of 27,000, it appears that in the two years 1903-04 the public vaccinator operated on 5755 persons and

[1] THE LANCET, Feb. 19th, 1898, p. 529.

that the work done by private practitioners might bring up the total for the two years to about 8000, this being in addition to all the vaccination done in Dewsbury in previous years, so that a very large part of the population, despite the antivaccination proclivities of the town, now sits safe and secure within the folds of the despised Jennerian prophylaxis.

Dr. ASHCROFT'S report on the hospital deals first with the buildings and next with the statistical results. Various defects in the buildings are pointed out, especially in the administrative block as existing when the epidemic began, but even then the ward accommodation was such as to allow of 26 patients having the standard air space of 2000 cubic feet and the standard floor space of 144 square feet. There was thus for small-pox alone very nearly one bed per 1000 of the population, and it is well known that this is normally regarded as sufficient for all ordinary infectious diseases combined, exclusive of small-pox. At one stage, indeed, some patients were received from another district but that practice had to be given up. In Germany, with its systematic vaccination and revaccination, a 26-bed small-pox hospital would, on the Berlin basis, be sufficient for a population of about 4,000,000, but in ill-vaccinated Dewsbury it proved quite insufficient for 27,000. Consequently there was a good deal of overcrowding and in any anti-vaccination apologetics for the Dewsbury epidemic it is likely that, as in Gloucester, this point will be made much of. Obviously, however, the cause of the overcrowding was not any want of reasonable accommodation for patients from a properly protected community but that the community was far from sufficiently protected, so that what would otherwise have been abundant ward accommodation proved quite insufficient. In September two new ward blocks of wood and iron, designed to hold 16 patients each, were hurriedly erected, but one of these was burned down before it was occupied. In the same month a small-pox convalescent home, with accommodation for about 40 patients in addition to the staff, was acquired by the corporation, and in October a canvas marquee was erected for nurses, but came to an untimely end in Christmas week, being blown down during a gale. These outlays and accidents are a significant illustration of what anti-vaccinating localities may have to face when visited by small-pox. As regards the hospital statistics they are of the usual character and show once more how variola differentiates between vaccinated and unvaccinated. The immunity of hospital nurses is a hard fact for opponents of vaccination to explain away, though they sometimes attempt to do so by suggesting that nurses are in some way seasoned against small-pox. But to the Dewsbury hospital there were admitted a considerable number of children and infants, not themselves suffering from the disease but because the houses in which they lived had been closed owing to their parents being stricken or because the mothers could not leave the infants at home unattended. Dr. ASHCROFT states that "these children were efficiently vaccinated and never in any single case did they show the slightest trace of small-pox and yet they were daily in contact with, and living amongst, persons suffering from the disease, often in its most severe forms and in all stages." This control experiment shows that vaccination protects even in the atmosphere of a small-pox hospital persons who are in no way seasoned against infection.

Finally, we wish to call attention to one fact which appears to contain in itself a severe rebuke to some medical men. Though in the borough of Dewsbury no vaccinated child under ten years old was attacked by small-pox, yet from some neighbouring locality a child between four and five years old, technically vaccinated, was admitted to the hospital suffering, not only from small-pox, but from fatal small-pox. Regarding this case Dr. ASHCROFT writes that there was only one small cicatrix one-sixteenth of a square inch in area and practically without foveation, and adds that "the mother states that she insisted on only having one mark made." No medical man in this country should accede to any such maternal request. He ought, as a matter of honour, to do vaccination properly or to leave it alone altogether. Before the days of the so-called "conscience clause" there might conceivably be some excuse for yielding to parental solicitation in this matter, but since 1898 it has always been open to the medical man to tell the parents that if vaccination is to be done at all it should be well done, and that if they object to its being well done they can get out of the difficulty by obtaining an exemption certificate. Accepting the facts as stated, medical pliancy in this Dewsbury case has been followed by a death from variola and has furnished to anti-vaccination agitators an opportunity for stating that a child certified to have been vaccinated successfully was attacked by, and died from, small-pox within about four years of its alleged protection. Every member of the medical profession should make it his own personal duty to see that in his practice no such case shall ever occur.

The Diagnosis of Cerebro-Spinal Meningitis.

THE Local Government Board has recently issued a memorandum to the various sanitary authorities throughout the kingdom in reference to "cerebro-spinal fever," or, as it is also termed, cerebro-spinal meningitis, the term we have usually adopted. Accompanying the memorandum is a communication which states that the Board has reason to believe that the fact that this disease has recently been somewhat extensively prevalent in Central Europe and in America has given rise in some quarters to a doubt whether cases may occur in this country. The Board announces the comforting assurance that so far as it has been able to ascertain there is no ground for such apprehension. It appears, in fact, to be probable that cerebro-spinal meningitis is at the present moment not more prevalent in this country than it has been from time to time during the last quarter of a century. Nevertheless, the Board quite rightly considers that sanitary authorities should be on the alert to detect the presence of the disease in their districts or to satisfy themselves as to its absence. To this end the Board has issued a memorandum which by dealing generally with the characteristic symptoms of the disease should prove of considerable assistance to the local sanitary service.

In a leading article in THE LANCET of April 15th of this

year, p. 1010, we drew attention to some points in connexion with this disease, dwelling particularly on its etiology, bacteriology and pathology, so far as they are known, and referring also to certain forms of treatment which have been adopted. The memorandum of the Local Government Board, while touching lightly on the same ground, is more concerned with the symptoms of the disease and consequently with the diagnosis. The principal symptoms of cerebro-spinal meningitis are briefly but accurately given in the words of JOHN NETTEN RADCLIFFE, the famous epidemiologist and first assistant medical officer to the Local Government Board; but there are certain phenomena which are either not mentioned by him or upon which it seems to us not sufficient stress is laid. For instance, hyperæsthesia of the skin is called attention to, but not as a characteristic symptom. It is, however, sometimes extreme and as the disease progresses the rigidity of the muscles of the neck and back becomes more marked. Spasm of certain groups of muscles is, of course, described by RADCLIFFE, but it might have been added that spasm of the ocular muscles may also occur, producing strabismus. There may be paralysis of the muscles of the face and eye producing irregularity of the pupils, nystagmus, diplopia, and ptosis, but we need not remind our readers that squint in any febrile case of doubtful nature should always lead to suspicion of meningitis. RADCLIFFE'S definition, however, remains as a very good description of a disease which, like other specific fevers, presents varying types in different epidemics. There are certain fevers from which it is sometimes difficult to distinguish cerebro-spinal meningitis and when an epidemic of this disease is expected, undue alarm may be caused by mistakes in diagnosis. For example, in certain manifestations pneumonia, typhoid fever, typhus fever, and influenza closely simulate cerebro-spinal meningitis. In this connexion Professor STOKES'S statement that "there is no single nervous symptom which may not and does not occur independently of any appreciable lesion of the brain, nerves, or spinal cord," may well be remembered. The difficulties in differential diagnosis may be accentuated in various ways as when epidemics of typhus fever and cerebro-spinal meningitis prevail at the same time. Confusion is then more likely to occur at the beginning of the attack, for as the symptoms progress the diseases gradually exhibit characteristic differences. The pain in the head and back of the neck is more severe in cerebro-spinal meningitis than in typhus fever, nor is opisthotonos present in the latter malady. In typhus fever the spots are more constant and numerous than in cerebro-spinal meningitis, while herpes does not occur in the former. The distinction between pneumonia and cerebro-spinal meningitis is sometimes particularly difficult, as the two diseases are not unusually associated, and it may be almost impossible to say which is the primary. Should it eventually be proved that the meningococcus is the sole cause of primary cerebro-spinal meningitis and that the pneumococcus characterises only the secondary form associated with pneumonia the bacteriological examination will be of great assistance. The meningeal complications in pneumonia are more liable to invade the convexity of the brain rather than the base, whence there may arise muscular contraction and tremor but not retraction of the head. Professor KERNIG of St. Petersburg, it may be remembered, has called attention to a physical sign, which has received his name and which he believes to be a valuable aid to diagnosis in meningitis when the spinal membranes are involved. According to Professor KERNIG ability to extend the thighs when lying down but not, or only with difficulty, when sitting, is indicative of spinal meningitis, but the value of this sign has given rise to considerable discussion. Dr. FRIIS found that it occurred in 53 out of 63 cases in which spinal meningitis was present, Dr NETTER in 45 out of 50, and Dr. J. B. HERRICK in 17 out of 19.[1] There is, however, by no means unanimity amongst physicians as to the value of this test, although mention is properly made of it and of the *tache cérébrale* in the memorandum of the Local Government Board. In the same document, also, reference is made to the diagnostic value of the examination of the cerebro-spinal fluid withdrawn from the lower part of the spinal canal by lumbar puncture for the presence of the diplococcus meningitidis intracellularis of WEICHSELBAUM.

The communication of the Local Government Board to the sanitary authorities may be welcomed as a valuable aid to medical practitioners in the event of the discovery in any district of groups of cases of illness which might possibly be of the nature of cerebro-spinal meningitis. A special report to the sanitary authority by the medical officer of health of the district should then be made and it is further suggested in the communication which accompanies the memorandum that a copy of such report should at the same time be forwarded to the Board. The Board would then be prepared to render the sanitary authority such advice or assistance as, in the circumstances, might appear to be necessary. As a further precaution the sanitary authorities are notified that the memorandum has been placed on sale, so that it is procurable by all who wish to peruse it. Fortunately, no indications have yet appeared that render it probable that an epidemic will appear in this country. It is well, however, that every precaution should be taken. Cerebro-spinal meningitis is not a common disease and official instruction given in this manner is highly to be commended.

Medical Education in South Africa.

THE interesting article by Dr. NEIL MACVICAR on the question of a medical training for natives in South Africa which appears in another portion of our issue this week, calls attention to a subject of the greatest possible interest as regards the future of our colonies in the dark continent. The native races of South Africa are as yet very little known in this country and we are but slenderly informed concerning their dispositions and capacities. The popular view of them is that they can be induced to work in the mines under conditions which would be exhausting to white men and that, as soon as they have in this manner obtained what they consider a competence, they return to their native villages, purchase a sufficient number of wives to cultivate whatever portion of ground may belong to or may

[1] American Journal of the Medical Sciences, July, 1899.

be allotted to them, and henceforth remain in contented indolence for the remainder of their natural lives. This view leaves out of sight a large proportion of the native population who have already learned to regard many matters from the white man's point of view, who are laudably ambitious for themselves and for their children, and who have shown an abundant capacity to profit by education. Among all the various tribes or races which constitute the native population individuals with these characteristics are coming into prominence, or may be discovered by any who choose to look for them; and they possess, in many instances, a quite remarkable gift of fluency, not seldom rising even to high flights of eloquence. It is partly no doubt by reason of this endowment, and partly also from the extent to which the education of the country has been commenced by mission schools, that the thoughts of many of the natives have been turned towards the ministry as a profession, and that the native Christians have come to possess a considerable number of preachers of very high qualifications for their office. Their excellence, it may be assumed, has been developed rather by a sense of rivalry with Europeans than by association with, or by purposive imitation of, them; for the chief intellectual development is unquestionably found among the Basutos, from whose territory white men are practically excluded, licences to live and trade there being only obtainable with difficulty. In all districts alike, however, and among all the races of the colonies, it is abundantly plain that contact with a higher grade of civilisation has aroused the native population from a state of comparative dormancy into one of active fermentation or ambition, and that the future of the country must be greatly determined by the degree in which it may be possible to guide this ambition into appropriate channels calculated to satisfy the legitimate aspirations of the more capable and to be of solid benefit and usefulness to the great mass of the people.

It may fairly be assumed that, in South Africa as in the United States of America, the race problem as a whole is one that should receive the best attention of statesmen. In both countries alike the dark races are the more prolific and the physically stronger. The whites possess the advantages of descent from an older civilisation—they are heirs to a higher intellectual level; but the dark races are following them upon a road which the whites have been compelled to traverse, and upon which it is not impossible that some of them may be overtaken. With these possibilities in view it is not conceivable that the natives can remain for an indefinite period in a hopelessly subordinate position, or that they will permanently consent to be hewers of wood and drawers of water for the descendants of the strangers who have occupied their country and who have possessed themselves of a large share of its wealth, but who at the same time have imparted to the original owners of the soil the secrets of European warfare and the knowledge of the value of European weapons. Physical amalgamation between the races, the absorption of one in the other or the absorption and disappearance of both in their common descendants, is a matter which appears to be impossible within any measurable limits of time; and the only peaceful solution likely to be attained must be by the contented recognition of differences, coupled with the existence of complete opportunities for individual development along any lines which either tastes or circumstances may suggest. The prevailing tendency of the more educated natives towards the pulpit is, we think, to be regretted, chiefly on account of the unfortunate alliance which has of late years sprung up, perhaps even more in South Africa than at home, between the pulpit and the platform. In a country where the preacher is too often a mere turbulent demagogue, bent upon maintaining his personal ascendancy over his flock by the simple process of giving utterance to their worst thoughts and by appealing to their worst passions, it is certainly to be regretted that this easy road to notoriety should be rendered too accessible to those who might have many temptations to abuse the opportunities which it would afford.

In these circumstances the projected arrangements spoken of by Dr. MACVICAR should be welcomed as affording not only a very ample and important outlet for native ambitions but also as likely to supply the colony with a large and eminently useful class of native practitioners, likely to exert a good influence among their own people and gradually to lead them along the path of sanitary progress. If this class can be supplied the natives of Basutoland or Bechuanaland will possibly have some advantages over ourselves. They will escape that intermediate stage between ignorance and knowledge, between civilisation and barbarism, to which we in this country are indebted for so many beliefs that die hard and for so many forms of the contempt which ignorance feels for knowledge. They will never have been taught to regard pestilence as a chastisement sent by the Christian GOD or proper sanitation as an impious interference with the Divine arrangements. They will not be likely to smile at the medical officer of their own race who traces their typhoid fever or their diphtheria to its source or utterly to disregard the protective measures which he describes to them as necessary. But while indulging in visions of this kind we must confess to have been somewhat puzzled by the limitations with which Dr. MACVICAR seems to think it desirable that the medical instruction of the natives should be surrounded. The proposal seems to be to supply, in the first instance, only half-educated men, and even to withhold the teaching necessary to inspire the licentiates, or whatever they are to be called, with reasonable confidence in themselves and their attainments. They would be something between the "assistants to an apothecary" who were formerly licensed in London and the *officiers de santé* who once existed in France. An assistant's licence is, we believe, frequently given at Apothecaries' Hall, but the duties of its holders are necessarily limited; the grade of *officier de santé* has been abolished in France, where it was found to be more frequently a cloak for harmful ignorance than a source of benefit either to the possessor or to those who consulted him. We are quite prepared to admit the possibility of imparting a modicum of medical knowledge to South African natives and of thereby doing a certain amount of good to the population, but we are none the less convinced that the formation of an inferior order of practitioners on any large scale or as in any degree an arrangement intended to be permanent would

be a mistake. A chain, it is said, is no stronger than its weakest link, and the native estimate of medical skill and knowledge would be likely to rest, before long, upon the native experience of the examples with which they were most familiar. Even in this country, if we may judge from recent pronouncements concerning medical education, it is not quite certain that the whole of those who may be described as the heads of the profession fully realise the extent and depth of the scientific knowledge which may be utilised in daily practice, and we would counsel all concerned, whether in South Africa or in England, to be more afraid of teaching too little than of teaching too much. The South African may or may not have limitations of capacity which must be considered in instructing him, but, so far as we are acquainted with the evidence, these limitations have not yet become apparent.

Annotations.

"Ne quid nimis."

SANITARY EFFORT IN THE ARMY.

FOR his presidential address to the section on Naval and Military Hygiene at the London Congress of the Royal Institute of Public Health (held from July 19th to 25th) the Professor of Hygiene in the Royal Army Medical College (Lieutenant-Colonel R. H. Firth, R.A.M.C.) took for his subject "Sanitary Effort in the Army: What has it done and what has it failed to do?" In focussing attention upon this important subject Colonel Firth discusses the answers to three main questions—viz: (1) What has sanitary effort done for the army in the past? (2) What is sanitary effort doing for the army in the present? and (3) What is sanitary effort going to do for the army in the future? Reviewing the medical statistics, constructed from data during periods of peace and for both earlier and recent wars, as a means whereby to answer the first question, Colonel Firth shows that the figures indicate marked improvement by way of diminished sickness in peace and of lessened death-rates; but that the degree of preventable disease-incidence on field service is still enormous, exacting a heavy tax on military efficiency—much greater than what we should experience had the effects of sanitary effort in war time been as proportionately good as they appear to be in peace. Colonel Firth offers a simple explanation of this. He reminds us that during the last 50 years a sound knowledge regarding the laws of health has been diffused among the general population of this country and wishes the fact to be realised (while not detracting from the good work in this direction done by certain officers of the medical corps) that many of the changes for the better, such as the lessened incidence of disease and the lessened mortality-rates among soldiers in our home and other garrisons during peace time, are explicable as the result of forces at work throughout the whole population and the whole land. Further, he asks whether such a thing as sanitation, using the word as meaning organised effort in the sense in which we see it around us in civil life, exists in the army now in these days of peace, and he reminds us that if organised effort is lacking in the army it is from no failure on the part of the medical service asking for its inception. As, in his opinion, the improvements which have taken place in the health of the army largely depend upon the excellence of the organised civil sanitary effort existing in the immediate neighbourhood of the places where the troops are located, it is easy to understand how it is that the soldier and the army at large only realise the penalties attaching to sanitary unpreparedness when brought face to face with practical problems either in the field or on some foreign shore where the facilities of home life are wanting. If organised sanitary effort is neglected in the army during peace can we expect it to be effective during war, for sanitary effort, like every other act of the soldier, needs to be practised in peace in order to be effectively executed in war? In considering the second question, Colonel Firth says that the answer resolves itself practically into a statement of what the Royal Army Medical Corps is doing for the study and prevention of disease. He believes that the corps is doing its utmost under present conditions to cope with the problems which confront it, and that at no time in its history has the corps been more sensible of its responsibilities or more animated with a desire to fulfil them; but he suggests pertinently that the army medical officer has not a free hand in regard to sanitary effort. What is now being done, in his opinion, touches merely the fringe of the question. His main reasons for thinking so are three: (*a*) there is no evidence of coördination of sanitary effort; (*b*) there is no evidence of the organisation and training of men during peace to cope with the two great problems on field service—namely, how effectively to supply soldiers with a safe water and how successfully to remove and render relatively harmless the effete material from men and animals; and (*c*) there is no evidence as to whom to hold responsible for failure in sanitation. In regard to the third question, What is sanitary effort going to do for the army in the future? Colonel Firth, while disclaiming any ability to prophesy, explains what he thinks ought to be done. First, as a matter of administrative efficiency he considers that the preventive side of medicine in its practical working needs to be considered separately from the curative. He proposes that a sanitary bureau should be established in the War Office as a section of the office of the Director-General of the Army Medical Service. This should be controlled by an officer thoroughly conversant with the whole theory and practice of preventive medicine, and he should administer and be responsible for the whole sanitary effort and organisation of the army, being endowed with the requisite powers. To this officer's bureau should come all statistical returns and all reports of a sanitary nature or dealing with disease-incidence throughout the army; for their tabulation and publication he would be responsible. His agents throughout the garrisons of the empire would be the sanitary officers of commands, divisions, or districts, whose work he would coördinate and control both by correspondence and personal inspection. Working under the sanitary officers, who would be staff officers in the fullest sense of the term, would be the various officers in medical charge of units, while in the case of large garrisons or commands one or more quarter-masters or staff-sergeants would be specially qualified as inspectors. The sanitary officer of a garrison should also be placed, Colonel Firth considers, in direct control of all conservancy methods, and in the four large commands the local sanitary officer should be responsible for the training of men belonging to the Royal Army Medical Corps in all methods of water-supply and purification suitable for field service. Such are Colonel Firth's views as to the lines on which sanitary effort in the army must be evolved. They secure coördination of effort and bring into operation an organisation susceptible of a direct chain of responsibility from above down. Colonel Firth believes that so far as the future is concerned, unless there is a complete change from the present methods, the outcome of the sanitary efforts in the army will be no better than they have been in the past. Will the authorities heed Colonel

Firth? He speaks clearly and he knows his subject. But similar things have been said before to deaf ears.

THOMAS JOHN BARNARDO: THE FRIEND OF POOR CHILDREN.

THE care of the waif and of the homeless is not only a duty imposed by every moral law upon those who have not failed in the battle of life, but is from the lower point of view of expediency the duty of every State. Thomas John Barnardo, F.R.C.S. Edin., known to the English-speaking world as Dr. Barnardo, who died on Tuesday night last at the comparatively early age of 60, had devoted 40 years of his life to the care of those who had no one else to care for them, and in doing so showed himself not only one of the most practical Christians of his time but one of the most valued citizens of our empire. In 1864, when he was studying medicine at the London Hospital (we believe in order to take up the career of a missionary to China), he occupied a part of his leisure time in teaching in a ragged school. One night one of his scholars seemed unwilling to go home and on being questioned said that he had no home to go to. Young Barnardo inquired into the truth of the story and found for himself the deplorable condition in which many London lads live. He almost immediately started a scheme for rescuing and boarding out waifs and from this small beginning sprang the great institution known as Dr. Barnardo's Homes. How successful these homes have been all the world knows and it was owing to the faith and energy of the founder that they were so—faith at the same time in his religion and in the good sense of his cause. The intense sympathy which he brought into the work of rescuing waifs, training them and placing them in advantageous circumstances, made all his "children," as he called them, feel that in him they had a devoted friend. His work was hard, for a long time it was unappreciated by the public, and in some quarters he had to undergo direct opposition, but his devotion and energy brought him the victory and his trials were well repaid by the results. He is stated to have been instrumental in rescuing and placing out in life over 55,000 children, and there are very few persons in the world who can claim to have made 55,000 personal friends. Although Thomas Barnardo is dead his work remains and will still be a power for good, for he has placed it upon a secure basis.

THE CAUSE OF DEATH.

AN inquest was held recently at the Chelsea coroner's court touching the death of Henry Baker, aged 53 years, the circumstances of which are of medical interest. Until a few months prior to his death the deceased was employed as a clerk at the Board of Education Offices, Whitehall. From the evidence it appears that for years he had been a confirmed dipsomaniac and this failing had undoubtedly led to his physical and social downfall and mental degradation. One evening, having placed 3*d.* into the slot of the gas meter, he retired to his bedroom, taking with him a bottle of gum and some hot water. On the following day, at five in the afternoon, his wife forcibly entered the room and found him lying dead on the bed, on his right side with his hand under his cheek. He appeared as if asleep. The burner had been detached from the gas bracket; the gas was turned on and the room smelt strongly of gas. The fireplace and the crevices of the door and window had been pasted over with paper. The case is interesting from a forensic standpoint. On the face of it it seemed highly probable that it was one of determined suicide by gas poisoning and the jury returned a verdict to that effect. There was the strongest possible motive for the deed and the means had been carefully planned. The position of the body was that of repose and there was no evidence of struggling. The medical man—Dr. John Reid—who was called to see the body found froth issuing from the mouth and cadaveric lividity in the dependent parts. But there was entire absence of the cherry-red hue indicative of carbon monoxide poisoning so common in coal-gas suffocation. This fact led Dr. Reid to conclude that death was the result of asphyxia from the body lying on the face whilst the deceased was in a drunken stupor. Against this theory was the testimony of the widow that the body was on the right side, with the hand under the cheek. We are not in a position to state the composition of the gas supplied by the company. In most instances illuminating gas contains a large quantity of carbon monoxide and when death occurs from its inhalation it is the last-mentioned constituent that is responsible for the issue. It was suggested at the inquest that the quantity of gas which could possibly escape from the turned-on jet would not be sufficient to cause death but we are not disposed quite to agree with this view if the supply, as deposed to by Mrs. Baker, would last for nine hours' burning, especially as the obvious apertures for ventilation had been sealed by the deceased who certainly intended and attempted to kill himself in the manner suggested. It may be that the death was the result of the combined causes—simple asphyxia and suffocation from inhalation of poisonous gas. As Dr. Reid demurred to the agency of the latter on perfectly sound scientific grounds, and as one of the jurymen expressed the opinion that a post-mortem examination was desirable, it is to be regretted that the coroner did not see his way to order a necropsy. A spectroscopic examination of the blood would at once have decided the doubtful point, for so tenaciously does carbon monoxide hold to the hæmoglobin that its presence may be detected months after death. If the report of the proceedings at the inquest is correct in the *Chelsea News* we take the strongest exception to the coroner's alleged remark: "You have no right to make that statement," as a comment on Dr. Reid's expressed view that the deceased "didn't die from gas poisoning." Whether Dr. Reid was right or wrong as regards the fact it was clearly within his province to form and to express his conclusion as to the possible, probable, or certain cause of death.

SANITARY CONDITION OF THE LEWS.

A REPORT just issued by the Local Government Board for Scotland, on the sanitary condition of the Lews, tends to emphasise the unhealthful mode of living in certain rural parts of Great Britain and to explain perhaps to some extent the reasons for the untoward prevalence of insanity in sparsely populated neighbourhoods. The report dealing with the sanitary condition of the Lews reveals the existence of a deplorable state of affairs. The Scotch crofters have been long notorious for their neglect of all that appertains to a civilised life and we now learn that in the Lews the absence of sanitary measures is as marked as among the Esquimaux or in the poorest districts of Russia. The manner of living in the Lews is clearly described by Dr. Frederick Dittmar, medical inspector, and Mr. Alexander B. Millar, general superintendent of poor and inspecting officer under the Public Health Act, in a very outspoken document. The walls of a typical crofter's cabin, we hear, are usually composed of loose stones with earth between. They are five or six feet thick and sometimes formed wholly of turf. The roof is so constructed that there is a space of about two feet between the thatch and the outside walls, which allows of thorough percolation of the house walls with moisture. The hut may consist of three parts, under one roof, a living room in the centre, and on either side of it a sleeping room and a byre. The living room is small and meagrely furnished, with a peat fire in the centre of the clay floor, the smoke from which finds its

way out by a hole in the roof or through the thatch and door. Light is admitted by one or two very small windows. The sleeping apartment is small, badly lighted, and not weather-tight. On one side of the living room and only separated from it by a wooden partition six or seven feet in height is the byre. The floor of this cattle-shed is thickly covered with manure, the accumulation frequently rising to a height of three or four feet above the level of the living room, and in this muck heap there may stand one or two cows and occasionally a horse and some sheep. Fowls nest in baskets hung against the walls. On the floor of the byre human excreta are deposited with the dung of the animals, there being no other form of midden. The ground outside the houses is sodden with water and drainage from the byres, while the drainage channels in front of the houses are usually choked. Some of the dwellings visited were in a by far worse sanitary condition than the typical one described above, one or two being characterised by the visitors as "not fit for a pig"—a phrase which appears to us to fitly sum up the typical Lews home. "Almost every house in the district," say the writers, "with the exception of the few stone and lime ones is uninhabitable and a disgrace to our civilisation." The water-supply is thus depicted: "The water-supplies, with few exceptions, in the whole of the Lews and the Long Island consist of shallow dip wells liable to all kinds of surface pollution, and when near houses often situated in the most low-lying and boggy ground. They are almost universally unprotected and animals have free access to them. ..... These dip wells only contain water during the winter months or in wet weather. In dry summer weather the people are obliged to go long distances, in many cases to the nearest mountain stream or loch." As may be well imagined, diseases are prevalent and deadly among people living in such conditions. Especially are the young children and those women who are compelled to spend a great part of their time indoors injuriously affected. Pulmonary tuberculosis is common and deadly in its action, while the conditions of life are not only extremely inimical to health but are antagonistic to decency and morality. The remedy recommended by the framers of the report is that the Local Government Board for Scotland should call on the local authority to carry out the provisions of the Public Health Act, these provisions not having been effectively carried out as yet. That steps should be promptly taken to better the conditions of life of the Lews crofters must be obvious to everyone and after this terrible report inaction will be impossible.

MEDICAL MEN AND MEDICAL TEACHING IN THE PHILIPPINE ISLANDS.

THE second session of the Philippine Islands Medical Association has been held recently and many interesting facts concerning medicine, sanitation, and medical teaching in these islands were made known. It would appear that there is a lamentable dearth of medical men, the ratio of physicians to the population in the islands generally being 1 to 21,209, and the ratio to population in Manila being 1 to 1013. Not only is there so great a scarcity of medical men but it is stated that during the past year the death-rate among physicians was greater than the supply. Moreover, the hospitals are antiquated, defective in construction and equipment, and in all respects inadequate to the needs of the population, while the facilities for medical teaching are woefully bad. At the meeting of the association which has just taken place measures for improving the medical service were discussed and a committee was appointed to consider the advisability of establishing a University of the Philippines, to consist of an undergraduate school and a college of applied sciences, engineering, medicine, law, languages, and philosophy. The United States are rising to the responsibilities which tropical possessions entail. They have not held their far eastern territories sufficiently long fully to grasp, perhaps, the true nature of the task before them. They are, so to speak, new to the work, and although their energy and capacity for overcoming difficulties are proverbial, they have yet much to learn with regard to the successful government and management of tropical lands. It goes without saying that good sanitation is the key of the situation from the standpoint of health. An instructive object-lesson on this phase of the matter has been afforded recently in the case of the Isthmus of Panama, where the construction of the Canal is now seen to be mainly a matter of public health. The Philippine Islands under Spanish rule were neglected in every way and especially little heed was paid to the solution of health problems. The consequence is that the United States public health and medical services have to take in hand *ab initio* the sanitary regeneration of their new possessions. In the towns of Cuba this object was successfully accomplished and there is no reason why similar results should not be attained in Manila and the vicinity. The establishment of a University of the Philippines, the reconstruction of the hospitals upon a modern basis, and the measures taken for relieving the scarcity of physicians and for improving the present service are all steps in the right direction, which will in the course of time vastly improve the conditions of life in the Philippine Islands.

ANGINA PECTORIS AND ALLIED CONDITIONS.

IN THE LANCET of Sept. 16th, p. 809, we published a lecture by Dr. Thomas Oliver on Angina Pectoris and Allied Conditions. He describes the varieties of angina pectoris which have been recognised and gives an interesting description of the phenomena which charactise the condition known as "pseudo-angina." He says that it has been found necessary to coin a word to include a group of cases in which, while præcordial pain and a varying sense of distress are prominent features, yet experience shows that they cannot be regarded as true angina pectoris. The prefix "pseudo" before a medical term we contend ought to be avoided if possible. Many conditions have been described which closely simulate well-known diseases and yet differ in some essential points. For instance, pseudo-tuberculosis, pseudo-tetanus, pseudo-fever, pseudo-tabes, and many other morbid affections have received notice. In some instances it has been found possible to change this unsatisfactory nosology and to substitute a more exact term. Sir Richard Douglas Powell, writing in Professor Clifford Allbutt's "System of Medicine" (vol. vi., p. 28) adopts the term "angina pectoris vasomotoria," mentioning as a synonym "pseudangina." This we consider preferable. Dr. Oliver does not discuss the advisability of retaining the expression "pseudo-angina." He remarks that the word has grown with current usage and conveys a meaning which is well understood, although there may be a difficulty in defining it. All practitioners have probably seen several instances of this condition. The symptoms are similar to those which occur in true angina pectoris but, as a rule, are not so severe and the sensation of fear is not so marked. Women are more liable to the affection than men. Dr. Oliver also draws attention to a vaso-motor type of angina described by the late Professor Nothnagel of Vienna in which palpitation, præcordial pain, a feeling of faintness, coldness of the extremities, lividity, and perspiration are the main features. As a rule the prognosis here is favourable, much more so, of course, than in the case of true angina pectoris. Nevertheless, the symptoms must be carefully scrutinised and careful treatment, especially of a preventive character, duly adopted. Fatal cases do occur,

and after death no characteristic lesions are found in the heart and vessels. Professor Huchard recorded a fatal case in which no other reason for death could be found than a functional failure of the heart from excess of tobacco. Dr. Oliver's contribution is a very interesting one and we commend to our readers a careful perusal of his remarks. With reference to the obvious objections to such a word as pseudo-angina we may notice that in this issue we publish an article on paratyphoid fever by Lieutenant F. P. Mackie, I.M.S., who concludes a very interesting account of this condition by observing that the unity of typhoid fever can no longer be upheld. If, then, there are diseases which produce similar symptoms but are caused by different micro-organisms and exhibit different morbid processes we contend that distinct names should be given to them and that the use of the prefixes "pseudo" or "para" can only give rise to confusion. In an annotation in THE LANCET of March 4th, 1905, p. 585, we made similar remarks on the word "paratyphoid," urging that this term was to be regretted, but we fear that it has now passed definitely into medical nomenclature.

MEDICAL SCIENCE IN TURKEY UNDER THE REIGN OF THE SULTAN ABDUL-HAMID II.

"MUCH is said and written in disfavour of the present Padishah and Khalif Abdul-Hamid II. The British press—one section, of course, more than another—has been apparently eager in the direction of throwing upon him all sorts of disparagement, blame and accusation. Mr. Gladstone's catchword of 'Great Assassin' has been repeated by those insufficiently informed of the languages, customs, and traditions of Turkey and grave injustice has been done. As a matter of truth Abdul-Hamid II. is one of the best Sultans that ever wielded the Ottoman sceptre. The fact that he has been reigning over his people for 30 years under the most adverse conditions is in itself a proof of his unusual abilities as a ruler and statesman." Thus an enthusiastic medical correspondent resident in the Sultan's domains, and as far as the science of medicine goes the facts support his words. The Sultan has always been eager to let his nation benefit as much as it was possible by the latest discoveries of science. A great number of charitable institutions have been created in all parts of the Ottoman empire owing to his initiative. Fountains of cool well-water, which are such a boon in a distinctly warm country, have been erected in many places at the expense of his private purse. In Constantinople itself every district and quarter is in possession of such a fountain which supplies excellent drinkable water absolutely free of any charge. The Turkish capital has especially benefited in many directions during Abdul-Hamid's reign. Asylums, lazarets, and hospitals of various descriptions, receiving the personal endowments of the Padishah, keep their doors open perfectly gratis to sufferers of every nation and denomination. In this connexion it is particularly interesting to mention that he displays paternal interest in, and large-hearted, generous sympathy for, afflicted children. His Hamidié hospital, a first-rate establishment equipped with all the requirements of modern medical science, is a just source of satisfaction and pride to himself as well as to his faithful Osmanlis. All the best medical men of the capital are engaged in the service of this hospital. They are assisted by a staff of excellently trained German nurses. The large leper hospital on the Asiatic side of the Bosphorus enjoys a specially active attention on the part of the Sultan. The place of refuge for old and poor and the asylum for the insane have been created and are sustained by his large contributions. It is also due to his initiative that the metropolis possesses a medical school with a highly efficient staff of professors as lecturers. Before he came to the throne there was not a single medical institution in the whole of the Ottoman empire, not a single sanitary establishment. Quacks of the most unscrupulous conduct had their unlimited sway. Under his reign sanitary councils have been instituted, laboratories for the chemical analysis of food-stuffs and institutes for hydrophobia and bacteriological research have been created. The Sultan evidently takes a vivid interest in every medical congress, as excellent representatives are always present from Turkey at these meetings, who have full power to take the initiative, on their return, of introducing necessary sanitary reforms. Well-organised lazarets are now to be found in different seaports of the empire. Large hospitals for the treatment of venereal and syphilitic diseases have been founded in the vilayet of Castamoni and in other places. Lately a very energetic movement has been set agoing, also upon the Sultan's initiative, to create in Constantinople an establishment for the deaf and dumb. We understand that the representatives of Turkey in foreign countries have been instructed to gather the necessary information and material as to the manner in which such establishments are conducted abroad. These things sufficiently prove that the popular estimate of the Sultan of Turkey, whatever his defaults as a ruler, is not justified.

NON-FATAL EXTERNAL RUPTURE OF AN AORTIC ANEURYSM.

THE fact that rupture of an aortic aneurysm is not always immediately fatal has been recently shown in our columns. Dr. C. H. Melland reported a remarkable illustration of this[1] and referred to the few other cases previously recorded. Subsequently in an annotation[2] we described an American case of repeated copious hæmoptysis from an aortic aneurysm. In these cases of repeated hæmorrhage the rupture usually takes place internally into the œsophagus, air passages, or pleural cavity. Cases in which the rupture of an aneurysm on the external surface of the body has not been immediately fatal are still rarer. In the *Albany Medical Annals* for September Dr. H. C. Gordinier has reported the following case. A man, aged 50 years, suffering from aortic aneurysm, was seen on Oct. 12th, 1904. A pulsating tumour occupied the upper half of the sternal region and extended into each infra-clavicular and supra-clavicular region. The sac appeared to be covered only by skin which was dark purple and showed two or three excoriations. The tumour was elevated six centimetres above the level of the surrounding chest wall. A rough systolic murmur was heard over it and was conducted into the vessels of the neck. The apex beat was in the sixth interspace three centimetres outside the nipple line. On Oct. 20th the aneurysm ruptured externally with profuse hæmorrhage saturating the whole bedding. The patient became unconscious and pulseless. After the subcutaneous injection of saline solution he recovered consciousness and the pulse became perceptible. Two sutures were passed round the opening and the hæmorrhage was arrested. On the 25th the patient was much improved and the pulse was better but intermittent. On the night of Oct. 26th a less severe hæmorrhage than the former one occurred and continued until 8.30 on the following morning when death took place. The necropsy showed an aneurysm of the ascending portion of the arch of the aorta which was filled with firm layers of fibrin. The ribs and sternum were eroded and the clavicles were displaced forwards. Only two other cases of external non-fatal rupture of an aortic aneurysm appear to have been recorded. The late Professor William Stokes in his work on "The Heart and Aorta" refers to the case of a man with an aneurysm which opened externally above the right second rib and for more than a year had at intervals

[1] THE LANCET, Nov. 19th, 1904, p. 1414.
[2] THE LANCET, June 3rd, 1905, p. 1523.

discharged blood, sometimes so copiously that the flow was arrested with difficulty. Three weeks after the last hæmorrhage the aneurysm diminished and he left hospital declaring himself to be quite well. The late Dr. George Balfour in his "Clinical Lectures on Diseases of the Heart and Aorta" refers to a case of aneurysm of the aortic arch and innominate artery which ruptured opposite the cartilage of the third rib. A stream of blood somewhat thicker than a crow quill issued. The patient, nowise alarmed, held a bowl to receive the contents of what he supposed to be a bloody boil and even squeezed it with his chin to empty it faster. After he had lost a quart of blood he fainted and the bleeding ceased. Four months later he died from typhus fever, the hæmorrhage never having recurred.

HOW DISEASE MAY BE SPREAD.

A CASE which was recently heard at the North London police-court demonstrates how disease may be spread by direct non-compliance with medical instructions. A young married man appeared before the magistrate to answer a summons taken out at the instance of the Islington borough council charging him with wilfully walking about and mixing with the general public whilst suffering from diphtheria after being informed by a medical man of the nature of the disease. The defendant suffered from a sore-throat and went to the Great Northern Central Hospital. He was seen by the house physician who told him that he was suffering from diphtheria and must be at once isolated and sent to the fever hospital. The patient, however, left the hospital and went home, promising to return in an hour, but he did not do so. The house physician had no power to detain him, and as he did not come back very properly reported the matter to the local sanitary authority. The diagnosis was verified by the culture test. Three days subsequently the patient went to a medical practitioner who at that stage of the disease failed to recognise it as diphtheria and told the man that he might go on with his work. The patient, however, did not mention the fact that a diagnosis of diphtheria had been previously made at the hospital. The magistrate, after severely admonishing the defendant, very properly fined him the full penalty of £5. The hospital authorities were placed in a difficult position. There is no law by which the patient could be detained against his will. It is, however, a question that might well be considered whether the power should not be given to the medical officers of public institutions to restrain patients suffering from infectious diseases from rendering themselves a public danger. The measures which would be necessary to interfere with "the liberty of the subject" would, of course, have to be laid down carefully. Undoubtedly considerable danger is likely to arise by individuals directly acting against medical advice when informed that they are the subjects of diseases which are included amongst those of which notification has to be given.

FORMIC ACID IN THE TREATMENT OF TREMOR.

M. E. Clément deals with the action of formic acid in the treatment of tremor in a note which was read before the Académie des Sciences of Paris and which was published in the *Comptes Rendus*, 1905, No. 18, p. 1198. The drug was administered with success in two severe cases of tremor, one a woman, aged 65 years, and the other a man, aged 72 years. The patients had suffered from tremor for ten and 18 years respectively. In each case the tremors were not due to senility as the chin, lips, and head were unaffected. The tremors disappeared during rest or at least were very faint. Formic acid was administered in doses of four grammes of the normal solution, with results which were both rapid and surprising. In two days the tremors were modified to such an extent that the patients were able to drink from a glass with one hand without spilling the liquid, whereas previously they had with difficulty drunk from a glass supported by both hands. Each day improvement was made though the tremors did not entirely disappear, which was not a matter for surprise seeing that in each case they were of long standing. M. Clément considers that no other drug has such a rapid and definite action for the purpose as formic acid. Hyoscyamine, hitherto considered the best remedy, does not, he states, compare with formic acid, and here is reason to hope that the remedy may also prove useful in certain forms of chorea.

THE EARTHQUAKE IN CALABRIA.

"BREAD and shelter," these words comprise the most clamant of the many appeals from Calabria, whose population, famished, houseless, enfeebled physically and morally, looks idly on in a state of semi-stupefaction as the relief parties, mainly soldiers and servants of the Red Cross, pass from ruined village to dilapidated township on their humane mission. Till the poor sufferers are adequately fed, clothed, and accommodated under a roof it is in vain to expect from them any active or effective coöperation with the well-meaning but not always well-inspired endeavours of their benefactors, official and amateur. Nor is there an hour to lose, particularly in the matter of providing shelter. The torrential rainfall characteristic of commencing autumn in Italy is expected from one day to another, indeed there are indications that it has already started, and what the condition of the half-starved, semi-nude, wholly demoralised population bivouacking under the "random bield" of hedgerow or cavern may become can be only too painfully anticipated. The danger as well as insufficiency of the shifts to which the sufferers are put to may be realised from one incident out of many. A countryman, by way of improvising a dormitory for himself, placed a sort of shed propped on wooden supports against the still standing wall of his ruined house. One of the recurrent seismic shocks levelled both wall and shed with the ground, burying the sleeper under the débris. Rescued by a relief party, he was so contused and maimed externally and internally that after lingering for three days he died (as the reporter states) in "dolori orribili." Near one of the severely visited townships the King in his philanthropic circuit was met by the local clergy, headed by the bishop, who appealed to his Majesty in aid of the churches, many of them a mass of rubbish. "First shelter, then churches" (*Prima tetti, poi chiese*), was the King's curt rejoinder, which sums up the most urgent need of the hour. The Red Cross, from its centre in Rome to its branches in the chief provincial towns, is active in forwarding tents and supplies of food and clothing, and already many hundreds of the population are enabled to spend the night under shelter after the primary wants of nature in sustenance and raiment have been satisfied. As a provisional step this is invaluable—giving time, before the rainy season has set in definitely, for the engineers and soldiery to demolish the tottering and dangerous buildings preparatory to utilising the material in the erection of new tenements on safer ground. *Pari passu* with this work of demolition, the dead bodies are being removed and buried where cremation is impracticable, and by this means the intolerable fœtor now all too perceptible in the more heavily visited districts is disappearing, to the manifest relief of the population and to the minimising of the danger from disease due to the infected atmosphere. The first panic over and the febrile, not always well directed, energy of the relief parties replaced by maturer and more systematic measures, the whole of the relief organisation is now working steadily, harmoniously, and effectively—thanks, in the first instance, to the reassuring and inspiriting presence, or rather ubiquity, of the King,

and next to the experienced action of the regimental and Red Cross relief parties—all coöperating on a well-considered plan and all vying with each other to anticipate, by adequate provisions, the advent of that continued rainfall which would prove only less disastrous than the earthquake itself to a population predisposed to well-nigh every form of ailment, bodily and mental. No disaster, however great, is altogether without its salutary sequelæ, and one effect of the recent earthquake has already been to send a thrill of common sentiment through the whole Italian kingdom, to extinguish provincial and even parochial jealousies, and to prove to the people themselves not less than to the outside world that the "unity" of Italy is indeed an accomplished fact. 22 years ago, when the great thermopathic resort of Casamicciola, in the island of Ischia, was the scene of a similar visitation, the measures of relief were rendered all but useless from the favouritism and the partiality displayed by those in charge of them. So much so, that on the morrow of this last earthquake in South Italy no less a man than Professor Antonino Anile, lecturer on anatomy in the University of Naples, thought it right, through the *Giornale d'Italia*, to warn the charitable public, domestic and foreign, of the possible malversation of the funds subscribed to mitigate the disaster. The events of the last week in Calabria and throughout Italy have happily rendered his warning unnecessary. The "sense of citizenship"—a product of tardy growth in Italy—has developed marvellously throughout the kingdom in the last two decades. And now, to the admiration of the civilised world and to the moral rehabilitation of Italians themselves, all classes, high and humble, official and non-official, are coöperating in the well-organised work of Christian charity—an exhibition not only of true patriotism but of collective philanthropy fraught with the best omen for the youngest (if also the oldest) of the Latin powers.

THE HYGIENE OF THE BARBER.

WE mentioned in an annotation in THE LANCET of Dec. 17th last that we had received a copy of the rules which it was intended to introduce in London for the more hygienic management of hairdressers' establishments. These rules were drawn up by the Incorporated Guild of Hairdressers, Wigmakers, and Perfumers, in conjunction with the medical officer of health of the City of London. Previously to that, in September, 1904, we discussed the subject in a leading article. We have now received from the local authority under the Public Health Act, 1903, for the city of Launceston, a bill measuring approximately 15 inches by 9 inches, and dated August 1st, 1905, setting forth the instructions "issued by the local authority for the said city, for the better hygienic management of hairdressing saloons." This bill, which is intended to be suspended permanently in a conspicuous place in the saloon (which intimation is printed on the top of the bill in red ink), notifies that the occupier of every room used for the purpose of the trade of a hairdresser should conform with the following requirements:—(1) Hair should be swept up regularly and floors washed twice a week; (2) hot and cold water and efficient drainage should be maintained and the hands of the operator washed before attending each customer; (3) shelves should be impervious; (4) cupboards should have clear glass fronts; (5) no cretonne, tapestry, or plush should be used; (6) head-rests should be protected by a separate paper or linen serviette for each customer; (7) clean, washable overalls (not black) without pockets should be worn by operators; (8) soap should be in powder, wafer, or tablet form; (9) razors should be wiped on paper; (10) separate wool or serviette should be used instead of sponges; (11) alum or magnesia should be kept in a dredger; (12) mugs and shaving brushes should be cleansed after each operation; (13) no one with obvious skin disease shall be shaved unless the hairdresser is satisfied that the disease is not contagious; (14) sponges, powder puffs, magnesia blocks, astringent sticks, corks in bottles, or revolving brushes should not be used; (15) scissors, brushes and combs, hair clippers, and razors should be stripped of grease by means of ammonia or soda and cleansed in some antiseptic solution; (16) the antiseptics recommended are cyllin, izal, and chinosol; and (17) hairdressers shall include barbers. It will be seen that the words "should be" are used in nearly all of the requirements instead of "shall be" or "must be," but the advice given is so sensible that compulsion was probably felt to be unnecessary.

THE INTERNATIONAL CONGRESS ON TUBERCULOSIS IN PARIS.

THERE are already 1800 members inscribed as desirous of participating in this Congress. They come from 33 different countries, but we understand that of these, so far, only 45 are British. This is very regrettable considering the importance of the gathering to medicine generally and the particular interest which all British sanitarians should take in the prevention of tuberculosis. M. Loubet, the President of the Republic, will entertain 120 of the leading delegates to dinner and will receive all the members of the Congress later in the evening at the Palace of the Elysée. This will probably be on Oct. 7th—that is, the last day of the Congress. On the first day of the Congress, Oct. 2nd, the President of the Congress, Dr. Hérard, will entertain the members at the Hôtel Continental. On the next day there may be a reception at the Ministry of the Interior and the Thursday will be devoted to numerous excursions. Among these there will be a visit to a new sanatorium at Montigny en Ostrevent, near Douai, which will then be inaugurated by the President of the Republic. On the same day other excursions will proceed to the Sanatorium of Bligny for adults and of Ormesson-Villiers for children. On the Friday there will be a great banquet when it is calculated at least 900 persons will sit together at table and the daily newspaper *Le Matin* is organising a fête at the Châtelet Theatre in honour of the members of the Congress. There will consequently be no lack of diversions during the week and, to judge from the reports which are to serve as the bases of discussion, some useful work should result from this international gathering. We would urge on our countrymen the necessity that British medicine should be adequately represented.

A METHOD OF PROTECTION AGAINST THE ROENTGEN RAYS.

THE numerous devices in use for the purpose of protecting the skin from the action of the Roentgen rays fall into two groups—viz., those consisting of opaque envelopes placed in the neighbourhood of the centre of emission of the rays and screens designed to cover the body of the operator, including spectacles, gloves, and aprons. But each class of protector possesses certain disadvantages. The principal defect of the localisers which comprise the first class is that a modification of the electric field around the Crookes tube is set up which tends to render the apparatus defective in working. Protective garments, on the other hand, hinder the movements of the operator. M. J. Bergomé of Bordeaux has described a method free from these inconveniences, which has been tried for six months in the medical department in the University of Bordeaux and in various hospitals. This method consists in so arranging matters that the operators are above a horizontal plane passing through the anti-kathode, while the patient alone is below that plane. The operator is thus able without risk to handle the sensitive

screen quite near the tube in an atmosphere free from the x rays. The bed of the patient is placed near the floor, so that the horizontal plane passing through the antikathode does not usually reach above the knees of the operator, nor ever more than two-thirds up the thigh of a man of average height. This plan enables the operator to exercise complete supervision, to determine readily the quality of the emitted rays, and to dispense with screens and masks. Since its adoption no case of radio-dermatitis has been discovered among the operators and the lesions of those already affected show a tendency to improve.

BRITISH HOSPITAL WORK IN PERSIA.

Major P. Molesworth Sykes, H.B.M.'s Consul-General and Agent of the Government of India in Khorassan, in an official report, dated August 5th last, to the Foreign Office observes, *inter alia*, that the Consulate Hospital at Meshed, although it is little more than an out-patient dispensary and very imperfectly suited to the carrying on of general medical and surgical practice, continues to do useful work and to make its influence felt far and wide. During the Moharram riots it was understood that the British consulate-general was held inviolable by the people on account of the great boon conferred on the population of Khorassan by the work of this hospital. During the past year the total number of patients treated was 48,017, of whom only 52 were in-patients. The number of major operations performed during the year was 41. Sick and injured are brought from even distant Herat for treatment and as the poor are fed at the expense of the hospital the in-patient department is beginning to be popular. A considerable number of patients, mostly of the wealthier classes, have been attended in their own homes, the question of hospital abuse not having yet arisen in Khorassan, and all patients are supplied with drugs from the dispensary free of charge. The space available for the reception of in-patients and for the performance of surgical operations is very limited in the hospital and until a short time ago such rooms as there are were little more than black hovels. In February of this year, however, the Government of India sanctioned a sum of 5000 rupees for the re-equipment and furnishing of the hospital and since then a further sum has been applied for to repair the buildings completely and carry out needful alterations. When finished there will be an operating theatre, an ophthalmoscopic dark room, and a room for the surgical dressing of out-patients, so that the hospital is now in a fair way to become suitably equipped for work of all kinds.

FATAL HEREDITARY ANGIO-NEUROTIC ŒDEMA OF THE GLOTTIS.

IN an annotation which appeared in THE LANCET of Dec. 24th, 1904, p. 1802, we described a remarkable case of angio-neurotic œdema in which the mucous membranes were involved and a piece of the mucous membrane of the stomach was removed during gastric lavage and found to be œdematous. This appears to be the only recorded case in which the existence of œdema of the mucous membrane of the stomach was demonstrated. The sequel of the case is given in the *American Journal of the Medical Sciences* for September by Dr. R. S. Morris and is of considerable interest. The patient first came under observation on Oct. 23rd, 1904, at the age of 21 years, complaining of swelling of the hands, legs, and larynx, and of gastric troubles. The symptoms began at the age of 12 years. At the age of 17 years tracheotomy had to be performed for œdema of the glottis. In April, 1903, the operation had to be repeated. On July 13th intubation was attempted without success for the same cause and a trocar was thrust into the trachea. On July 15th, 1904, inspiration was so difficult that the patient became cyanosed. A hypodermic injection of morphine was given and relief was gradually afforded in about three hours. Swellings very frequently occurred on other parts of the body, especially after blows, and the frequency of these increased in the last few months of life. On Jan. 3rd, 1905, the patient was apparently well when he retired for the night. About midnight his parents were aroused by an unusual noise and on going to his room found him propped up in bed with the front of his night-shirt covered with blood. Death occurred before medical assistance could be obtained. Permission was given only for examination of the respiratory tract. The mouth and pharynx were filled with blood. The larynx showed intense œdema which involved the epiglottis, the aryteno-epiglottidean folds, and the false and true cords, the ventricles being obliterated. Above the true cords the œdema was the most intense; below them there was none. A curious fact was that no scar from the tracheotomy wounds could be found in the trachea. The following new facts in the family history were elicited. Another child of the patient's mother was "choked to death" suddenly at the age of about two weeks. The attacks of angio-neurotic œdema from which the mother suffered since childhood increased after the patient's death. The swellings have occurred on the limbs and face but she has never had any distinct throat symptoms although of late the neck has shown a tendency to swell.

THE Secretary of State for Foreign Affairs has sent to the Board of Trade a copy of a telegram, dated Sept. 15th, from His Majesty's representative at Hamburg, intimating that no further case of cholera has occurred at that port since Sept. 6th.

THE Royal College of Physicians of Ireland has appointed as its representative at the forthcoming International Congress on Tuberculosis at Paris Professor E. J. McWeeney, bacteriologist to the Local Government Board for Ireland.

THE QUESTION OF A MEDICAL TRAINING FOR NATIVES OF SOUTH AFRICA.

BY NEIL MACVICAR, M.B., C.M. EDIN., D.P.H.

IN view of the probable establishment in South Africa of an inter-State native college[1] the question suggests itself, Will it be possible to give the natives at their present stage of development anything of the nature of a medical training? I think one may say at the very outset that a complete medical course, such as is given in Europe, is at the present time quite out of the question for the natives of South Africa. There can hardly be two opinions about this, except, perhaps, among the natives themselves, who have no idea of the difficulty of a medical curriculum. Admitting, then, the present impossibility of such a course one must also admit that the aspirations which some of the better educated natives have in this direction are perfectly legimate and further that a scientific and medical training—if it could be managed—might be expected to produce a class of men who would not only benefit their own race medically but who would also have over them a wise and steadying influence. An inter-State native college ought, therefore, I venture to think, to keep steadily in view the establishment of a medical faculty and should work towards that end. As soon as the natives have shown themselves capable of it a complete course should be attempted. Meantime a hospital course might be given which would both be useful in itself and would pave the way for a qualifying curriculum.

In India a class of men have been permitted to practise whose training falls short of the European standard. This is, no doubt, justified by the needs of the enormous native population of that country. I do not think such a course

[1] Report of Native Affairs Commission, 1905.

would be wise in South Africa, except possibly in the native territories. If native practitioners of inferior training were to be permitted independent practice—for example, in Cape Colony—complications would inevitably arise between them and the district surgeons and other European practitioners in their neighbourhood. A man of inferior training should not be set to oppose a fully qualified man. He ought rather to be set to assist him.

I.—A SUGGESTED COURSE.

There are, I believe, many district surgeons and other European medical men in South Africa who find it very difficult to give the attention they would like to give to their native patients and who, in this department of their work, would be glad to have the assistance of educated and trained natives. A training in dispensing, vaccinating, ambulance, antiseptics, anæsthetics, nursing, and hospital work generally would, I believe, produce a class of native assistants likely to be useful in dealing with native patients, and especially in the wards and dispensaries of native hospitals; and if to these subjects were added instruction in the nature and prevention of disease these native assistants might do most useful work as sanitary inspectors and health teachers among their own people. Such a class of native assistants might receive official recognition, being called dispensers, hospital assistants, or some other title which would indicate plainly their position. A diploma of a kind, a hospital diploma, might be given them.

It should be the aim of the college to turn out assistants who would not only be conversant with the practical details of their work but men also of education who would do their work with an intelligent interest. Further, while I would make independent practice impossible for them by omitting from their training such subjects as physical diagnosis and therapeutics, I would propose to teach them as much as possible of subjects like anatomy, chemistry, and physiology, a knowledge of which could only add to their usefulness. I would go further and try to give them as clear a conception as possible of the nature and methods of prevention of common diseases so far as these are known. They might then, as in Madagascar,[1] be made use of to give lessons in hygiene in the village schools and elsewhere, and I think that in this way something really effective might be done to check the ravages of those diseases—such, for example, as tuberculosis and enteric fever—which at present are the cause of much suffering among the natives and which, moreover, are now, and will continue to be, a menace to the white population of South Africa so long as they remain unchecked among the natives.

The hospital course, then, might be arranged somewhat as follows. I am taking for granted that students, before entering upon this course, will have passed through a preparatory course including classes in chemistry, physics, and natural science.

Proposed hospital course of two years' duration.—First year: Anatomy, taught by means of skeleton, models, diagrams, and dissection of animals; five hours a week. Physiology and histology, two hours a week; text-book, Huxley's "Physiology," illustrated by sections and simple experiments. Materia medica, including a knowledge of drugs, their sources, their appearance, their preparation for use, their actions upon the healthy body, their doses, and the treatment of cases of poisoning by them; three hours a week. Practical training in pharmacy and in section cutting and the use of the microscope.

Second year: Pathology and prophylaxis, illustrated by sections, and including bacteriology; five hours a week. Minor surgery, including bandaging; the principles and practice of antiseptic surgery as applied to the treatment of wounds, burns, &c.; the methods of treatment of fractures, dislocations, sprains, and bruises; ambulance and first aid, anæsthetics, venereal diseases, tooth extraction, the names and uses of the commoner surgical instruments; two hours a week. The care of the sick, including a knowledge of the symptoms of common diseases, methods of administering medicines, diets required in different diseases and their preparation, baths, packs, massage, temperature recording, precautions to avoid the spread of infection, methods of disinfection, the use of medical appliances, the care and feeding of infants, and the uses of the ordinary household remedies; three hours a week. Practical training in chemical and microscopic examination of discharges, nursing male patients, surgical dressings, and vaccinating.

It will be noted that in the above-outlined hospital course the subjects proposed to be taught are limited in a definite way. Thus, materia medica is taught but not therapeutics. The symptoms of diseases are given (as in a nursing course) but not the physical signs. In the absence of that intimate knowledge of the interior of the body and its diseases which can only be gained by dissecting and post-mortem examinations one dare not teach students auscultation and percussion. Hence they cannot practise and ought not to be taught therapeutics, major surgery, or obstetrics. This curriculum would very possibly have to be modified as the result of experience. It resembles that given to compounders in India, with these differences: that the students are presumed to have a better preliminary education than is required of compounders and that the curriculum includes the study of pathology and bacteriology. For the purposes of this training there would be required a native hospital and dispensary and a small laboratory. The teaching staff might consist at first of two qualified men who could divide the teaching and the work of the hospital and dispensary between them.

A course such as has just been outlined would serve two purposes. In the first place, it would supply a present want in the country by providing a class of intelligent and, to a certain extent, skilled native assistants; and, in the second, it would be a step—in the present condition of the natives almost a necessary step—towards a full medical curriculum. I think that this assistants' course might be gradually worked up to a sufficiently high standard to make the transition to a qualifying course comparatively easy, and if this were done native capacity would be adequately tested before the expense and responsibility of a full course were undertaken. It may be objected that, as the course became more difficult, the college would be over-educating these native assistants for their work. The answer to this objection would be that the work they would get to do would naturally depend upon the extent of their training and capacity, and while they would never be able to practise there need be no limit set to their usefulness as sanitary inspectors and health instructors, working under direction and solely among their own people, and the better trained they were the more competent would they be to perform these really important duties and especially to combat native superstition with regard to the nature and causes of disease.

The first step towards a qualifying course might be to make the teaching and laboratory appliances of the preliminary scientific subjects of the preparatory course sufficiently good to justify an application to some home university for recognition. When this had been attained it would be in the power of any student of special ability and means to continue his medical curriculum at home and so to qualify completely instead of taking the assistants' course in South Africa.

The next important step would be the establishment of a full anatomy course, with a dissecting room; and, finally, a sufficiently large hospital, with post-mortem examinations and a good surgical and medical staff, would be necessary before the last rung of the ladder could be reached and the qualifying course given. Considering the present state of the natives this may seem to many a wild ambition. But there can be no doubt that the desires of many natives lie in this direction and provided they are prepared to begin at the bottom of the ladder and mount it step by step as students at home have to do, an inter-State native college may well consider it a duty to give them the opportunity. No other college curriculum is more likely to produce good results and less likely to produce bad ones, provided always that the teaching is thorough and that students who exhibit moral obliquity of any kind are carefully eliminated.

II.—EXPERIENCE IN OTHER COUNTRIES.

A good deal is to be learnt from the experience of those who in other parts of the world have established medical schools for natives. I have tried to obtain information about some of these and the following details are, I believe, correct.

India.—In India three principal grades of native medical assistant are recognised and besides these there are also certain sub-grades. The lowest is that of compounder. This grade, strictly speaking, has no official recognition and no Government qualifying examination. A compounder is expected to be able to dispense and to do simple surgical

[1] Colonie de Madagascar et Dépendances. Arrêté créant un Corps de Médecins Indigènes de Colonisation. 15 Octobre, 1900.

dressings. In the North India School of Medicine for Christian Women at Ludhiana compounders receive a two years' course of teaching in elementary anatomy, physiology, chemistry, materia medica, bandaging and minor surgery, hygiene, toxicology, antiseptics, and anæsthetics.[3] The second grade is that of hospital assistant. To qualify for this a four years' training is required, which includes systematic instruction in materia medica and pharmacy, anatomy and dissections, medicine, surgery, midwifery, forensic medicine, and hygiene.[4] Successful candidates either enter Government service as hospital assistants or engage in private practice. The third grade is known officially as that of assistant surgeon. The course extends over a period of five years and, besides the subjects just mentioned as being taught hospital assistants, includes chemistry and practical chemistry, physiology, botany, diseases of women and children, and pathology. This course approaches in completeness that of a European university and students who successfully complete it receive a licence and M.B. degree.

China.—The only medical schools conducted on European lines in China at the present time are connected with mission hospitals, except one at Tientsin, which commenced as a mission school and was taken up by Li Hung Chang. Of these schools the Hong-Kong College of Medicine for Chinese, founded in 1887, may be taken as an example. The syllabus of this college for the year 1903 shows that students, during a five years' course, receive instruction in the following subjects: anatomy, chemistry, physiology, materia medica and therapeutics, practice of medicine, surgery, midwifery and diseases of women and infants, medical jurisprudence, pathology and tropical, infectious, and eye diseases. Successful students receive a licence, and after serving the Hong-Kong Government for three years either enter private practice or continue in Government service. It may be mentioned that a proposal is at present on foot[5] to establish a large teaching medical college in Central China, Christian in tone but independent of all the missions. The London committee, which is trying to give effect to this proposal, hopes that in such a college a much more complete medical training will be possible than can be given in a mission hospital.

Madagascar.—In the year 1863 the London Missionary Society founded a hospital at Antananarivo and began to give a medical training to a number of Malagase students. This example was followed two years later by the Norwegian missionaries. In the year 1885 the two missions united and formed a medical school granting diplomas which were recognised by the Malagase Government. Still later the native Government itself established a hospital and medical school. When the French took possession of the island they established (in December, 1896) a well equipped medical college at Antananarivo which absorbed and replaced those earlier schools.[6] In this college native students undergo a five years' course of study and practical training. As their curriculum presents some curious and interesting features, it is here given in detail.[7] First year: Physics, chemistry, parasitology, anatomy, and practical organic chemistry. Second year: Anatomy and histology, physiology, minor surgery, medical and surgical cliniques, dissecting and practical physiology, &c. Third year: Same as second year, with general pathology. Fourth year: Pathology, medical procedures, emergency surgery, obstetrics, pathological anatomy, therapeutics, diseases of the skin, dentistry, clinical instruction, diseases of the mouth, diseases of children, medical ethics, duties of a medical man, hygiene, materia medica, and practical organic chemistry. Fifth year: Cliniques medical, surgical and obstetrical, materia medica, the ethics and professional duties of medical men, diseases of the mouth, medical jurisprudence, therapeutics, dentistry, children's diseases, and pharmacy. Up to the end of 1903 the college had granted 112 diplomas.[8] Four students had also taken French degrees after less than two years' study in France.[9] The best diplomates receive appointments in the Government service with the prospect of promotion. Others become private practitioners. Others get employment upon the railway.

Egypt.—The Medical School of Cairo[10] was founded by a Frenchman in the year 1827 and for more than 20 years it was staffed by French professors. Then, after being for a few years under the charge of German teachers, the school passed into the hands of native Egyptians and so it remained until after the English occupation of Egypt. The curriculum during the French period was one of five years. Later it was extended to six years. When in the year 1898 the English were re-modelling the whole school they cut down the course to four years, excluding at the same time "all preliminary scientific subjects." The school is now well equipped and strongly staffed. The subjects taught are materia medica, chemistry, anatomy, physiology and biology, pathology, medicine, pharmacology and dispensing, forensic medicine, hygiene, surgery and operative surgery, midwifery and gynæcology.[11] Diplomates of the Cairo Medical School have the right to practise in Egypt and many of them at the same time hold Government appointments.

Syria.—If the Indian, Hong-Kong, and Egyptian schools be taken as representative of English methods and the Madagascar school of French methods, the Syrian Protestant College school of medicine at Beirut is a good example of what Americans have been able to do in circumstances very similar to those of the other schools. This school was founded by the American missionaries in the year 1867. It has a four years' curriculum, which includes the following subjects: chemistry, inorganic, organic, and physiological; anatomy, including "practical work"; histology, zoology, materia medica, and pharmacology; physiology, "with demonstrations"; hygiene, medical jurisprudence; pathology, with "laboratory work"; practice of medicine, surgery, obstetrics and gynæcology, dermatology, diseases of the eye and ear, therapeutics, diseases of children, and bacteriology in laboratory.[12] To successful students a diploma is granted and also the degree of doctor of medicine and surgery. These qualify their holders to practise in any part of the Turkish Empire, including Egypt.

With the single exception of the compounder's course, given by the Ludhiana school, all of these curricula qualify to practise. They, however, differ from one another in many respects and their points of difference are instructive.

Entrance tests.—These are as follows:—

India.—Lahore Medical College (Assistant Surgeon Course): Intermediate Examination of an Indian University or equivalent examination. Lahore Medical School (Hospital Assistant Course): Anglo-vernacular middle school examination. North India School of Medicine, Ludhiana (Hospital Assistant's Course): University entrance examination or Anglo-vernacular middle school examination, but students intending to study in Urdu are not expected to pass these examinations.

China.—Hong-Kong College of Medicine: Examination equal to Standard VI. of Hong-Kong code.

Madagascar.—Antananarivo College of Medicine. Examination subjects: First, French language; second, physics, chemistry, zoology, and botany; third, mathematics (arithmetic, including fractions and proportion and simple geometry).[13]

Egypt.—Cairo Medical School: Possession of secondary education certificate or its equivalent (Arabic, English or French, arithmetic, geometry, algebra, geography, physics, chemistry, and drawing).

Syrian Protestant College School of Medicine.—Entrance examination in fluent English, French or Turkish, geography, physiology, arithmetic, algebra, geometry and physics, or satisfactory completion of second year of arts course.

The intermediate examination of the preparatory or arts course of the proposed South African native inter-State college would probably before long be equal to that of the Syrian or Indian colleges and would suitably prepare a student for his medical course.

The language question.—While there can be no doubt of the educational advantage of giving elementary instruction largely in the vernacular, when it comes to advanced scientific instruction the labour of translating becomes very heavy and the system is apt to prove unworkable. When the French established the Egyptian School of Medicine early in

[3] Prospectus of the North India School of Medicine for Christian Women (1903-04).
[4] Syllabus of the Lahore Medical College and School (1900).
[5] Medical Missions at Home and Abroad, March, 1905.
[6] La Dépêche Coloniale Illustrée, Dec. 31st, 1903.
[7] Règlement de l'Ecole de Médecine de Tananarive, September, 1902.
[8] La Dépêche Coloniale Illustrée, Dec. 31st, 1903.
[9] Rapport sur le Fonctionnement de l'Assistance Médicale à Madagascar en 1902.
[10] Records of the Egyptian Government School of Medicine, 1901.
[11] Report upon the Hospital and Medical School of Cairo, 1903.
[12] Catalogue of the Syrian Protestant College, Beirut, Syria, thirty-eighth year, 1903-1904.
[13] Arrêté, Dec. 30th, 1903.

the last century they had all their lectures interpreted into Arabic and a large number of text-books were translated out of the French into Arabic. But in time these books became obsolete and were not replaced by new translations. Now all the teaching is in English and the librarian holds special English classes for backward students. In China at the present time there are, I am informed, only two schools of medicine (Hong-Kong and another) in which the teaching is in English. In all the others instruction is given through the medium of Chinese, and many English text-books have been translated into Chinese. Some time ago a medical journal was started in Chinese for the benefit of native practitioners and, so far as I know, this journal is still in existence. On the whole it seems probable that Chinese, unlike Arabic, will prove to have sufficient vitality to develop a medical literature of its own and so to justify the experiment of teaching in it. In India, I believe, the instruction is chiefly given in English. In the Ludhiana school, however, besides the ordinary hospital assistants' course, given in English, there is an easier course in the vernacular Urdu. In Madagascar the instruction is in French and in Syria it is in English.

With the natives of South Africa it is quite evident that the instruction must be given in English, and if the intermediate examination of the literary course be made the condition of entrance to the medical classes there should be no difficulty about this point. The question may, however, arise as to the necessity of any second language and in particular as to the advisability of native students studying Latin before entering upon the medical course. A glance at the details just given of the preliminary examinations shows that neither in Egypt, Madagascar, Syria, nor China is a knowledge of Latin required. I have not details of the Indian entrance examinations. To my mind it is self-evident that until the South African native has perfected his knowledge of English it is a gross waste of his time to study any other language, and that for a medical man, if a second language is to be learned, German, French, or even Japanese would be more useful than Latin. All the Latin that is required in order to understand prescriptions could be conveyed in a fortnight's simple lessons.

Preliminary scientific subjects.—A medical man is expected to have a good general knowledge of the physical and natural sciences. Therefore physics, chemistry, botany, and natural history find a place in the modern medical curriculum. These subjects have only a slight practical bearing upon the future work of a medical practitioner. Their chief value lies in this, that they give the student a breadth of view and a scientific habit of mind which are an excellent preparation for the more specialised studies upon which he is about to enter. The most necessary of these subjects for a medical student is chemistry and, with the exception of the hospital assistants' course in India, chemistry enters into the curricula of all the schools which we have been examining. Physics is taught in the Madagascar school only but it enters into the Syrian and Egyptian entrance examinations. Botany is included in the Indian higher course and zoology in the Syrian curriculum and both these subjects are included in the entrance examination of the Madagascar school.

It will thus be seen that preliminary scientific subjects enter somewhat sparingly into all of these curricula. In Egypt they seem to have been a tax upon the time and mental powers of students rather than a help to them, for when the course was shortened in 1898 "all preliminary scientific subjects were excluded," chemistry being, however, retained.

If the literary course of an inter-State native college in South Africa is developed upon broad lines these subjects might all be included in it and one cannot help hoping that, if taught practically, they would develop rather than exhaust the mental powers of the students and, as at home, prepare them for their medical studies. The South African native at present is so unaccustomed to think scientifically that I cannot believe it would be a wise policy to allow him to skip these preliminary scientific subjects and launch at once into the more definitely specialised branches of the medical curriculum.

Special scientific subjects.—Following the preliminary scientific subjects which a medical student studies only in a general way there comes a group of scientific subjects which bear directly upon medicine and surgery and which therefore must be studied thoroughly and in detail. These subjects—human anatomy, physiology, pathology, and materia medica—form the foundation of a student's knowledge, for which his earlier scientific studies have, as it were, cleared and levelled the ground. They are of paramount importance to him, because if he obtains a thorough grasp of them he can hardly do otherwise than succeed, while if his knowledge of them is deficient he is almost sure to fail in his subsequent medical and surgical work.

All the qualifying curricula under review include anatomy and materia medica, and all except the Indian hospital assistants' course include physiology and pathology. The degree of thoroughness with which these subjects are taught no doubt varies in the different schools and it is difficult to form any opinion as to this by merely looking at the printed curricula. Anatomy in particular, which in Europe every student has to learn by the laborious but most instructive method of dissecting, is difficult to teach in Oriental countries on account of the abhorrence of the people to such a method. In China dissecting cannot at present be done and the "mannikin" is made use of for the purpose of teaching anatomy. In India, Egypt, and Madagascar systematic dissections are carried out by the students. In the Syrian school "students have a course of practical work each year" for two years.

When one remembers that it is only for about a century and a half that the dissection of the human body has been systematically practised in European schools of medicine—the great Greek physicians having apparently obtained their knowledge of anatomy from dissections of animals[14]—one need not wonder that in an Asiatic country much prejudice has to be overcome before dissecting can be introduced. There is no reason to suppose that in South Africa the difficulties to be overcome would be greater than in India and I believe that if it were plainly put before the native people that before the assistants' course could be developed into a qualifying course a dissecting room would have to be established they would soon acquiesce. Post-mortem examinations, also, would have to be of fairly frequent occurrence if a qualifying course were to be given in pathology.

Final subjects.—At present in British schools the attention of senior students is directed mainly to two subjects, medicine and surgery. Obstetrics and gynæcology may for our present purpose be regarded as branches of surgery. To these are added, but in quite a subordinate position, the subjects of public health and medical jurisprudence. The history of medicine and medical ethics have not, at least until quite lately, received attention.

Looking at these subjects broadly one sees that at present almost the whole emphasis of the later years of a medical curriculum is laid upon curative medicine and surgery, while preventive medicine receives little attention. One can detect, however, a growing opinion amongst medical men that the time is at hand when methods of prevention will have to receive a far greater share of attention at the hands of the profession than they do now. Now that a considerable body of fairly exact knowledge exists as to the causes and methods of propagation of disease a large field of work is opening out to medical men, and in the medical inspection of schools, health classes under the direction of the county councils, societies for the prevention of tuberculosis, and other kindred efforts, one may see the advancing edge of a great wave of activity which in the near future will absorb the energies of many medical men. I fancy that every medical practitioner and every surgeon, while he rejoices that he is privileged to relieve and sometimes to cure disease, must often cherish the wish that he had been called in before, and not after, the mischief was done. It is to be expected that in time the growing opinion of the profession will be reflected in the curricula of the medical schools and that much greater attention than at present will be given to the subject of preventive medicine. In view of this it would be well in planning even a native assistants' course to lay emphasis upon prevention rather than cure.

Certain features in the curricula which we have been examining remain to be noticed. A careful analysis of the subjects taught discloses the fact that, although in a general way qualifying to practise, certain of the curricula have limitations that are not met with in European schools. For example, in the curriculum of the Madagascar school there is no mention of gynæcology, and the instruction in surgery is limited to minor surgery and emergency surgery. As French practitioners are stationed in every province of the island it is not necessary for the native medical men to be familiar with the operations of major surgery except in so far as these belong to the surgery of emergencies. The other

[14] Hunterian Oration, by John Tweedy, February, 1905.

omission is probably due to considerations of moral expediency. There are no such limitations in the curricula of the Syrian, Egyptian, or Hong-Kong schools, or in the higher (assistant surgeon) Indian course. But gynecology is omitted from the Indian hospital assistants' course. The French course is also remarkable for the attention given to the ethical aspect of medical work.

The sizes of the hospitals used for clinical teaching in the various schools are as follows: Cairo, 400 beds; Antananarivo, three hospitals of 81, 100, and 110 beds respectively, all apparently used for teaching; Lahore, 245 beds; Ludhiana, 70 beds; Beirut, 83 beds; and Hong Kong, at least 80 beds.

In conclusion, I must express my very great indebtedness for the information kindly supplied me by the Principal of the Lahore Government Medical College (Lieutenant-Colonel S. H. Browne, I.M.S.), the Principal of the North India School of Medicine for Christian Women (Miss E. M. Brown, M.D.), the Director of Studies Hong-Kong College of Medicine for Chinese (Dr. R. McLean Gibson), His Excellency General Gallieni, Governor-General of Madagascar; the Director of the School of Medicine, Cairo (Dr. H. P. Keatinge), and the President of the Syrian Protestant College (the Rev. Howard S. Bliss, D.D.).

THE SPREAD OF CHOLERA.

(FROM THE BRITISH DELEGATE TO THE OTTOMAN BOARD OF HEALTH.)

YOU will no doubt have received from other sources[1] information upon the present outbreaks of cholera in certain parts of Germany and Austria, but as my preceding letters have followed in some detail the unbroken history of the spread of the disease since 1902—from the Hedjaz to Egypt, thence to Syria, Mesopotamia, Persia, Asiatic Russia, the Caucasus, and up the Volga to various places in European Russia—it may be useful to continue the story of the western extension of the disease, so far as the information received here will permit.

The first case in Hamburg is officially stated to have been a Russian emigrant who arrived at the Russo-German frontier station of Illowo on August 25th; he travelled with other emigrants in a closed wagon to Hamburg, where he arrived on the 26th. He was taken ill with syncope in the emigrant's waiting-room and removed to the lazaret at Groden, where he died on August 29th. The cause of death was shown bacteriologically to have been Asiatic cholera. This patient had come from the village of Dzekan, in the government of Lomza, in Polish Russia. A second case occurred among Russian emigrants at Hamburg on Sept. 2nd. A third case in a woman has since occurred and has ended in death.

On Sept. 5th it was officially reported that up to that date, in addition to the Hamburg cases, 77 cases of cholera and 24 deaths from the disease had occurred in different places in the basins of the Vistula, the Brahe, the Netze, and the Bromberg canal. On the 7th it was stated that one case of cholera had been observed at Posen, two at Bromberg, one at Konigsberg, two suspected cases at Marienwerder, one suspected case at Lendsberg, and 12 cases and six deaths at Marienburg and in its neighbourhood. On the 9th news was received that one fatal case had occurred at Frankfort on the Oder, another fatal case at Chanow, 18 cases and six deaths at Nakel, three suspected and two certain cases at Marienburg, and one fatal suspected case at Marienwerder. Five other suspicious cases were said to have occurred in the environs of these towns. On the 10th it was reported that five suspected cases and one death had been recorded on the previous day in the Dantzig district and that on the 8th and 9th 19 cases and seven deaths had occurred in the infected towns. On the 12th it was stated that on the two preceding days 33 cases and 15 deaths had been recorded in the Bromberg district, four certain and four suspected cases in that of Dantzig, and that since the beginning of the outbreak there had been observed in all 161 cases of cholera and 58 deaths in Germany, distributed over 50 different localities. Finally, from noon on the 11th to noon on the 12th eight suspected cases and three deaths occurred in the districts of Dantzig, Bromberg, and Frankfort on the Oder.

The outbreak in Austria has been of a much less extensive character. Between August 22nd and Sept. 4th seven cases of cholera, with three deaths, occurred in two villages in Galicia. In the first, named Padew-Narovodo, in the district of Mielec, in the province of Tarnow, five cases occurred. In the other, named Grodzisko, in the district of Lanzut, two cases only were observed. In each village the first case developed in a labourer employed on a raft on the Vistula or its branches. On Sept. 10th it was reported that two suspected cases of cholera had been observed in Silesia, but these have been since declared not to have been cases of cholera. Finally, on the 12th a fatal suspected case occurred at Tarnow.

The exact origin of the outbreaks in Germany and Austria is at present unknown, but on geographical considerations alone it would seem highly probable that they must be ascribed to an importation of infection from Russian territory. So far as is known the latter is the only European country in which cholera has been present for several years past and although records of its actual presence there during the past few months are wanting it is more reasonable to suppose that the disease has been lying dormant there during that period than to ascribe the outbreaks in Germany and Austria to a local development of the cholera germ without importation, or to an importation from some still more remote country, such as India, where cholera is always present, or Persia, where it was present during the past winter. It will be recalled that in the earlier months of last winter there was a very extensive epidemic of cholera in the Caucasus and Transcaucasia and that between September and February the infection spread up the Volga and caused comparatively mild outbreaks of the disease in the governments of Astrakan, Saratof, and Samara. These were believed to have come to an end in February; but on March (12th) 25th a suspicious case was observed at Bataisk in the Don Territory; and on (April 21st) May 4th an actual case of cholera was reported from Tsaritsyn on the Volga. On May 15th two suspicious cases were observed in the Bogorodsk district of the Moscow government, and since that date there have been rumours of the presence of cholera at such widely separated places as Lodz, Tula, Radom, Vilna, Riazan, and Tomsk. On bacteriological or clinical evidence the cases which gave rise to these rumours have been declared not to have been cases of actual cholera. It is necessary, therefore, to suppose that the infection, if it has indeed lingered on and been the cause of the German and Austrian epidemics, has remained more or less latent or has given rise only to mild, unrecognised cases of the disease. The remarkable facts that in Germany the disease has been mainly spread in the provinces of East and West Prussia and Posen and in Austria in that of Galicia; that these provinces are grouped around the governments of Polish Russia; that these latter governments are watered by the Vistula and are known in Russia as the *Privislinskia gubernii*, or governments on the Vistula; that the German and Austrian outbreaks are practically confined to the basins of the Vistula and its branches; that some of the earliest cases in both are said to have occurred in lumbermen on these rivers; and, finally, that the first case in Hamburg was that of a Russian emigrant,—all point to the conclusion that the source of the epidemics must be sought in the Polish governments of Russia.

The measures taken in Turkey in view of the above outbreaks are at present confined to a medical visit on arrivals by land or sea from the infected places, together with disinfection of their dirty linen and of the railway carriage or ship's cabin they may have occupied, and five days' medical surveillance at their place of destination.

Constantinople, Sept. 14th, 1905.

[1] THE LANCET, Sept. 16th, p. 862, letters from our Paris and Berlin Correspondents.

ASYLUM REPORTS.

Monmouthshire Asylum, Abergavenny (Report for the Year ending March 31st, 1905).—Of the 964 patients resident in this asylum at the close of 1904 661 belonged to Monmouthshire and 217 to the county borough of Newport, which up to the present has been part owner of the asylum but is now opening an institution of its own. The balance was composed of out-county and

private patients. The recent separation of the counties of Brecon and Radnor from that of Monmouth, in consequence of which the insane of the two former counties now go to a separate institution, does not appear to have had any effect upon the number of admissions to the Monmouth Asylum. The admissions (excluding patients received under contract) amounted to 238. The average number resident was 936. 79 patients were discharged recovered (34·3 per cent. of the admissions) and 12 relieved. Of the former it is instructive to note that 70 had been under treatment less than one year, of whom 53 were under treatment less than six months, and 52 of the 79 were cases of first attack and of less than three months' duration on admission. The deaths numbered 99, being at the rate of 10·5 per cent. on the average number resident. Tuberculosis claimed no more than 7 per cent. of the total number of deaths, the average for asylums of similar size being 16·5 per cent. The electric light is being installed. We note that two of the asylum employés, retiring after long service, have been liberally pensioned. The weekly charge per head is only 8*s.* 5½*d.*, notwithstanding that this institution is conducted most efficiently as testified to by the report of the Commissioners in Lunacy.

Salop and Montgomery Asylum (Report for the Year 1904).—From the report of the Commissioners in Lunacy it appears that this asylum is greatly overcrowded, there being at the date of their visit 41 patients in excess of accommodation, notwithstanding that 20 patients were boarded at another asylum and 25 at a workhouse. The Commissioners, after visiting the latter, declined to sanction a scheme for boarding a further number of patients therein. Since their report a further 20 patients have been boarded at another asylum. The medical superintendent, Dr. D. F. Rambaut, reports that on Jan. 1st, 1904, the patients under care numbered 808, of whom 17 were private. There were during the year 195 admissions, 46 being readmissions. Of the admissions, 77 were in the most favourable class for treatment (first attack, onset within three months of admission). Of the discharges 83 had recovered, giving a percentage of 46·11 on the admissions according to Table III. of the statistics, and nine were relieved. The deaths numbered 97, being 11·8 per cent. of the average number resident; of these 20 were from tuberculous disease, 12 from influenza and its complications, three from erysipelas, one from colitis, and one from enteric fever; other causes were usual and without special interest. Three cases of enteric fever occurred the source of which is not referred to, and probably, therefore, it was not ascertained. There were also two cases of small-pox amongst the patients attributed to infection from a neighbouring house. The Commissioners note in their report that since their previous visit some 19 months before there had occurred five cases of enteric fever, seven of erysipelas, and several of influenza, in addition to the cases of variola referred to, and they therefore express the hope that the asylum may be provided with an isolation hospital at an early date. The committee of the asylum in its report states that the matter is engaging its attention, as is also the question of the accommodation at the institution. This, it is evident, is insufficient for the needs of the counties. The high proportion of deaths from phthisis (22 per cent. of the deaths occurring in the period between the visits of the Commissioners) is probably connected with overcrowding. Amongst recent improvements are the provision of a reservoir for water for use in case of fire and the installation of an electric fire alarm system; a steam fire-pump is still needed, the pressure of water in the hydrants being, it is reported, inadequate. The weekly cost of maintenance, which first reached 9*s.* in 1901, according to a table supplied is at present 9*s.* 4*d.* The appearance of swine fever is reported, a scourge from which asylums suffer rather frequently. All the pigs had to be slaughtered. It is satisfactory to note that a superannuation allowance was given to a charge attendant incapacitated from work and the accounts show that eight previous employés are in receipt of pensions.

County and City of Worcester Asylum (Annual Report for 1904).—This asylum is seriously overcrowded, according to the report of the Commissioners in Lunacy, though from that of the visiting committee it appears that there are not more than 26 patients in excess of the accommodation, 30 women are boarded out at other asylums. A new asylum is, it appears, being erected for Worcester. Mr. G. M. P. Braine-Hartnell, the medical superintendent, reports that at the close of the year 1904 there were resident 1193 patients, showing an increase of 30 in the year. The average number resident throughout the year was 1176. There were admitted 252 patients, the highest number but one since the opening of the asylum. As regards the causation of insanity in these we find "hereditary influence" and "family predisposition" (not direct heredity) given as causes in 12·6 and 17·8 per cent. respectively. It would be advantageous to know what is meant by the indirect heredity implied in the second designation. The percentage of cases in which heredity, direct or indirect, was ascertained is decidedly low. In 23·4 per cent. of the admissions the cause was unknown. The recoveries during the year numbered 102, or 44·88 per cent. of the admissions, which is satisfactory, the average percentage for the past six years being about 41. Of the 252 admissions 131 are shown by Table VII. to have been in the two most favourable classes for treatment, i.e., they were either victims of a first attack or the onset had occurred within 12 months of admission; the mean age of the admissions was 43·5. From the point of view, therefore, of duration of attack and of age the admissions were of a fairly satisfactory type and as regards condition of health only 54 were in really bad health. The deaths numbered 101, or 8·58 per cent., on the average number daily resident. Pulmonary tuberculosis accounted for 17·8 per cent., a fairly high proportion, and colitis for 15·8 per cent., a very high proportion. The latter disease has been prevalent, and the medical superintendent has found it quite impossible to isolate cases owing to the overcrowded state of the wards. In addition to colitis there have been two cases of erysipelas and three of typhoid fever. The number of cases of pulmonary tuberculosis and colitis points to the need of immediate reduction of the overcrowding by boarding out, pending the completion of the new asylum. No doubt, however, as the committee observes in its report, there is difficulty in obtaining accommodation in other asylums, where only patients of the best, that is, the least troublesome, class are commonly received. Officials resigning during the year after long service have been duly pensioned. This asylum is enabled to maintain its patients at the very low cost of about 7*s.* 11*d.* per head per week and to make a charge of no more than 8*s.* 2*d.* for them. The average cost for asylums in general is 10*s.* This fortunate state of things is probably connected with the fact that a farm of unusual size (517 acres) is maintained, which was worked at a profit of £427 on the year. There are many obvious ways in which the working of a farm is beneficial to asylum patients and asylum committees may be advised generally to turn their thoughts in this direction.

THE PUBLIC HEALTH OF JAPAN.

WE have recently received from the Home Department of the Imperial Japanese Government a copy of the last annual report of its Sanitary Bureau, which is dated from Tokio and relates to 1901, "the thirty-fourth year of the Meiji." The volume, which covers 200 quarto pages, is carefully prepared and well printed, and although from well-known circumstances its publication has been considerably delayed the report has in no degree suffered in consequence. It gives evidence throughout of systematic and skilful compilation and in regard both to the intrinsic merit of the subject matter and to its methodical arrangement it might advantageously be adopted as a model for reports of this kind by certain State authorities nearer home.

The statistical matter of the report is distributed with suitable comments over four sections, but as the first two of these are directly concerned with matters of professional interest, it is to them that our present remarks will be limited. Section I. gives a general account of the constitution of the Sanitary Bureau, together with the names, official rank, and duties of the several members. In Japan the supervision of the public health is entrusted to permanent officials of exalted rank—each division of the business being directed by an expert of proved competence, who is held responsible for the good conduct of his department. The Imperial Government itself commissions the high State officials who hold the rank of "Councillor," whilst the subordinate officers, of the grade of "Haunin," are appointed by the heads of the several Government departments. In this way independent men are secured at the head of the

administration with efficient workers under them to carry out their orders. The following are among the matters specially dealt with in this section. 1. The issue and modification, from time to time, of regulations for the education, examination, registration, and discipline of practitioners of medicine and of pharmacy as well as for the compilation and periodical revision of the Japanese official Pharmacopœia. 2. The determination of conditions for the granting of health certificates and for the conduct of bacteriological investigations at the hygienic laboratories. 3. The regulation of departments for the preparation and supply of vaccine lymph, as well as of serums for the treatment of plague, diphtheria, and rabies. 4. The drafting of "bills" for presentation by the Home Minister: (*a*) in regard to the sanitary inspection of shipping and to the temporary establishment and closing of quarantine stations; (*b*) as to the methods of chemical and microscopical analysis of food, drink, and clothing, for the detection of adulteration by arsenic and other impurities; and (*c*) as to the prevention of pulmonary tuberculosis, leprosy, and hydrophobia. From this summary it will be seen that in point of administrative detail the organisation of the bureau is complete. Preventive medicine in its largest aspect and therapeutics in their minutest details are equally cared for.

Section II. of the report is devoted to vital statistics and to the details of public hygiene. It contains an instructive account of the administrative measures adopted for the protection of the food and water supplies, and of the provisions for public sewerage, sweeping, and scavenging. The custody of the insane is evidently provided for with much care and arrangements are made for the due supervision of such persons of unsound mind as are permitted to remain under the care of their friends. The chapter dealing with infectious diseases is replete with interest: it treats not only of their fatality but of the number and proportion to population of cases coming under treatment from time to time. The report does not state whether in Japan there exists statutory compulsion for the notification of these diseases similar to that recently provided in England, but it is evident that the authorities in that country are alive to the necessity of tracing out the source of infection and this would seem to involve the possession of some such legal powers as now obtain with us. The group of "eight contagious diseases" dealt with in the Japanese report corresponds to the "seven chief epidemic diseases" of the English Register Office, with the single addition of plague. Among these diseases by far the most fatal is dysentery, nearly 50,000 cases of that disease having occurred in one year alone. The fatality seems to be very high, averaging more than 25 per cent. of the attacks. Dysentery is stated to have "raged furiously" in Japan, and especially in the North-Western provinces, during the years 1893 and 1894, since which period it has steadily declined, the decline being attributed in the report solely to the persistent application of common-sense preventive measures. Typhoid fever appears to be prevalent in Japan, not fewer than 24,000 cases having been observed in the year 1901. The deaths from this disease average 1·20 per 10,000 inhabitants and its fatality is represented at 22·4 per cent. of the cases known to exist. Of typhus fever 21 cases are reported, out of which seven proved fatal. Small-pox is stated to have attacked 92 persons during this year, but only four of these died, it being clear that the Japanese authorities are alive to the protective influence of vaccination. Scarlet fever cannot be either prevalent or fatal in Japan—only 46 cases, with three deaths, having occurred during the year. Many of the prefectures were entirely free from this disease. Diphtheria seems to be both a common and a destructive disease—about 15,000 cases, one third of which were fatal, having occurred in 1901. Compared with the previous year diphtheria mortality seems to have decreased in the year last mentioned, but the disease appears constantly to infest certain prefectures and to prevail there with exceptional severity. Plague was discovered in two prefectures only—the total number of attacks being three, two of which ended fatally.

In the report several charts are inserted showing the percentage of deaths to cases of each infectious disease as well as the proportion of known attacks per 10,000 inhabitants. These charts convey useful information and their preparation must have entailed considerable labour. They are, however, defective in this respect—that they do not show either the ages of the persons attacked or the proportion of deaths to cases at the several ages. As it is known that the prevalence as well as the fatality of most infectious diseases is determined by the age constitution of the population, it follows that the sickness and death returns for Japan are not comparable with those of other countries where the age distribution of the people may be, and probably is, widely different. We would suggest to the authorities of the Japanese Sanitary Bureau that the value of their statistics of disease would be greatly enhanced by the addition of full particulars with regard to the age of those attacked with infectious diseases. This principle has been carried out very completely in several of the public health reports of this country and especially in those of the medical officer of health of the administrative county of London, and the value of the report has been much enhanced thereby. In a well-equipped sanitary administration the question of infantile mortality is doubtless receiving the attention which its importance demands but we find nothing bearing on the matter in the report. In England this question has tardily come into prominence in consequence of the continued depression of the birth-rate. In future reports from Japan we hope to learn whether a similar connexion exists in that country between the birth- and death-rates of the infantile part of the population.

The regulations for the prevention of ordinary epidemics are given in the report; they are very complete and apparently designed with especial regard to the requirements of the several areas concerned. During the year 1901 special regulations have been issued or amended respecting the treatment and prevention of plague, as well as for the more perfect control of epidemics of measles and of influenza. And with respect to administrative arrangements for carrying out precautionary measures, including the appointment of epidemic inspectors, we note that such matters are not left to be provided for at the discretion and at the sole expense of local authorities as they are in England. On the contrary, they are regarded as measures necessary for the protection of the national health and are paid for in great part by subventions from the Imperial Exchequer. The manner in which vaccination is carried out may be gathered from the statement that in the year 1901 as many as 3,384,457 persons were vaccinated, of whom 1,704,329 were vaccinated for the first time, 910,866 for the second time, and 769,262 for the third time. An efficient organisation exists in Japan for the prevention and treatment of venereal disease. As many as 530 separate places in different parts of the country are set apart for the systematic medical examination of known prostitutes. The total number of such examinations during the year approached 2,500,000, with the result that 2¼ per cent. of the women were found affected with syphilis. In consequence of the rigour with which this system is carried out the proportion of syphilis among Japanese unfortunates is said to be decreasing.

It is evident that the Japanese intend to carry out the public health regulations of their empire with the same thoroughness that they have displayed in respect of their imperial politics, their army, and their navy.

THE ANTI-MALARIAL CAMPAIGN IN ITALY IN 1904.

THE Italian Society for the Study of Malaria has published its annual report for 1904. The year was one in which malaria assumed a severe type and afforded abundant opportunity for a renewed study of the various malarial problems such as the radical cure of recidivity; the pre-epidemic treatment of the malarial residue from former epidemics; the medicinal, the mechanical, and the mixed methods of prophylaxis; the destruction of the malarial mosquito; and the reclamation of waste lands in malarial districts.

For the radical cure of recidivity the members of the society are unanimous in recommending quinine as superior to all other remedies. Its use in recidivous cases, if continued patiently and perseveringly, restores the patient to his usual health, generally without the help of other medicinal adjunct. The addition of iron and arsenic is of doubtful benefit; indeed, it is frequently noticed that after taking arsenic gastric disturbances are frequent, there occurs

not uncommonly a true arsenic exanthem in the form of acne spots and even of pustules and the treatment has for a time to be interrupted. The best adjuvant to the action of quinine for overcoming the anæmia in obstinate cases is good nourishing food. It is satisfactory to note the ever-increasing use of the State quinine. Its popularity is due to the first-rate quality of the drug as supplied by the Government; to its guaranteed purity, excellent state of preservation, pleasant and easy form of administration (in sugar-coated tablets), perfect assimilability, small cost to the public (who can purchase it at every corner where a "salt and tobacco" shop is to be found); still smaller cost to those who desire, or whose duty it is, to distribute it gratuitously to labourers in the malarial zones; and its efficacy. These qualities are slowly but surely dissipating the ancient and firmly rooted prejudice against quinine entertained by many of the rural population. In the past financial year 1904-05 no less than 13,000 kilogrammes (nine and three-quarter tons) of the State quinine have been distributed—a large amount certainly, but not so large as the needs of the country demand. Besides tablets for ordinary use the Government has also issued sterilised vials of hydrochlorate and bichlorate of quinine for hypodermic injection, prepared according to Gaglio's formula, which is the best and is that adopted by the State at the Central Military Pharmacy; but these should never be employed except when the stomach is intolerant of quinine or when an energetic and prompt action of the drug is urgently required. Another most welcome addition of the past year to the State's pharmaceutical armamentarium is the sweetened preparation of quinine known as "cioccolattini di chinino" (chocolates of quinine). These pastilles are greedily taken by children who have hitherto been more victimised by malaria than have adults, chiefly because of their dislike to quinine, the bitterness of which had never before been sufficiently disguised. The "chocolates" are easily swallowed; they have not only a certain nutritive value but give excellent results.

That the pre-epidemic treatment of recidivous or of latent malaria advocated by Koch has proved insufficient to prevent, or even to mitigate, the fatal effects of the disease, is the conclusion arrived at by the Society for the Study of Malaria, whose report holds that in order to reduce the sources of infection by which one epidemic feeds another the most effective means consist in treating all the year round, and as thoroughly as possible, all recidivous cases. The prophylactic effects of quinine given in daily doses of 40 centigrammes (6 grains) to adults and 20 centigrammes (3 grains) to children, whether in preventing new infections or in reducing recidivity, are becoming more and more evident. The difficulties encountered in carrying out this method on a large scale are very great, as may be easily imagined when the ignorance of the peasantry in matters of hygiene and their habitual improvidence are taken into account; but wherever it was applied scrupulously and for the whole epidemic period cases of fever were reduced to a minimum. By unanimous consent it is agreed that it diminishes recidivity even in the worst malarial regions; that it banishes "perniciosità," prevents cachexia, very frequently stops the outbreak of primitive fevers, and in every case mitigates the virulence of attacks and renders recovery from them easier and more complete. It is computed that in all about 70,000 individuals have been subjected since the beginning of last year to the quinine prophylaxis for periods varying from 10 or 15 days to 15 months, a sufficient test not only of the efficacy of quinine as a prophylactic and therapeutic agent but also of its almost absolutely innocuous nature.

Mechanical prophylaxis, on the other hand, has not made the same rapid progress as the medicinal. It is, however, still employed with excellent results on the railways, especially on the Adriatic, Sicilian, and East Sicilian lines, notwithstanding inherent difficulties which are always present where human apathy and heedlessness have to be reckoned with. It is apparent that the destruction of larvæ and nymphæ of the anopheles is impossible or extremely difficult in the big marshes and that it is at best only practicable in the smaller ones. Even in the latter the expense is very considerable and an organised attempt to accomplish it is not feasible in Italy. It has been proved once more by the experience of the past year that in the case of the famous Plain of Pestum, hydraulic "bonification," however well conducted, is not synonymous with hygienic purification and that without agrarian "bonification" there is no diminution in the prevalence of malaria. In many of the Adriatic provinces of Central Italy and of the northern provinces, where 30 years ago malaria was extremely rife and very severe, reclamation of waste land as a precedent to hydraulic improvements has contributed in a marked degree towards banishing the disease or reducing its incidence to a minimum. Further legislation is urgently needed in these directions, and especially in regard to the rice fields where the requirements of hygiene have to be reconciled with the economic exigencies of an important and lucrative industry.

But of far greater utility than any legislative measures must be the education of the population in malarial districts by means of pamphlets, conferences, and constantly reiterated explanations and demonstrations. For the rural population one fact holds more value than any amount of argument; hence nothing serves more usefully for educative purposes than the so-called "campi dimostrativi" (demonstration areas), not for the purpose of giving a scientific demonstration which is now, indeed, superfluous, but in order to overcome the apathy, heedlessness, and prejudices which centuries of existence in a malarial locality have engendered in the minds of the peasantry. An uneducated population will not otherwise be brought to realise that they can by simple means protect themselves against an hereditary enemy or limit in any degree the incalculable injury which it has always inflicted upon them and which they devoutly believe to be sent from heaven itself. It is also necessary to perfect and to supplement the sanitary services during the epidemic period; to secure the coöperation of proprietors, tenants, manufacturers, contractors, and others, who for their own sakes should be eager to avail themselves of the State quinine and to help to distribute it; and finally, to organise provincial medical services by appointing one or more assistants to the *medico provinciale* selected from amongst those medical men who have made a special study and possess a competent knowledge of the new etiology, epidemiology, and prophylaxis of malaria.

Whilst, therefore, much remains to be done towards improving the organisation of the anti-malarial campaign, a glance at the statistics shows how much has already been accomplished, especially since the State quinine was introduced in 1902. In the 15 years preceding that date the average mortality from malaria was usually about 15,000 and never less than 11,000 per annum, whereas during the succeeding years the rate has fallen rapidly until it has reached less than half of the former figure. The economic advantages of this diminished mortality, and still more of the diminished morbidity which it implies, are enormous to the country at large, but in the various communes, where for years the fight against malaria has been going on, the relief has been more particularly felt. In 1904, notwithstanding the recrudescence of malaria in the Campagna in that year, the saving effected in the hospitals of Rome by the diminution in the number of cases was very considerable, more than compensating the commune for the cost of the quinine gratuitously distributed. And so in other places, such as Mantua and Argenta, where a similar economy was rendered possible. The railway companies also have reaped much benefit, a trifling expenditure on the anti-malarial campaign having effected a large saving in their administration, particularly on the Adriatic, Sicilian, and East Sicilian systems.

Public Health and Poor Law.

LOCAL GOVERNMENT BOARD.

REPORTS OF MEDICAL OFFICERS OF HEALTH.

The City of Sheffield.—Much interest with regard to pulmonary tuberculosis attaches to this city in that it is the only district in England in which a modified form of the compulsory notification of pulmonary tuberculosis is in force. The Act which embodied these compulsory clauses came into force in November, 1903, and the clauses provide that although the disease is to be a notifiable one the penal clauses in the Public Health Act which apply to the acute infectious diseases are not to apply to pulmonary tuberculosis. It is thus not possible to arrest a person who may be suffering from consolidation or cavitation of the lung when he takes a walk for the benefit of his health within the confines of the city, nor is he compelled to notify to the

driver when he enters a cab or a tramcar the fact that he is suffering from consumption. Dr. Harold Scurfield, the medical officer of health, reports that during 1904 there were 838 new cases notified, the actual number of certified deaths from this disease during the years 1902–04 having been respectively 491, 573, and 536, figures which would seem to suggest that perhaps half the existing cases are never notified. The use made of the information thus obtained is as follows. There are two inspectors engaged to visit the homes of the patients and to leave copies of printed instructions designed for promoting the cure of the disease and diminishing the risk of infection. Advice is given as to the necessity for an abundance of fresh air, pocket spittoons are presented to those too poor to buy them, and during the later stages of the disease the patient's room is sprayed with formalin on the occasion of each visit of the inspector. Dr. Scurfield, however, adds, and the statement is worth the notice of all sanitary authorities, that it is not to be expected that the full benefit of the new provisions will be obtained until something is done in the way of providing hospital accommodation for the badly housed advanced cases and sanatorium treatment for the early and curable cases.

County Borough of Wigan.—Mr. William Berry expresses the opinion that the early removal of cases of scarlet fever from a house where isolation cannot be properly practised prevents the spread of that disease in the household itself as well as to neighbouring houses. He thinks that both the death-rate and the complications are diminished by the better general conditions under which the patients are housed in hospital and, while admitting that it may be a coincidence, he points out that during 1904 there were 11 deaths among the cases notified. Six of these cases which were severe when sent to hospital died in the institution, the fatality rate amongst the admissions having been 4·06 per cent., as against a rate of 9·43 per cent. among the cases "left to be nursed in better houses with personal care and nursing."

The City of York.—The medical officer of health of this city (Dr. E. M. Smith) is evidently an enthusiastic administrator, more especially where the prevention of small-pox is concerned. During the height of the small-pox epidemic at Dewsbury it was announced that a football match between York and Dewsbury was to be played at York on Oct. 11th. The danger with which York was thereby threatened led to the chairman of the York health committee advising the York Football Club to postpone the match. There had been over 300 cases of small-pox in the Dewsbury district during September and a person suffering from small-pox who had come recently from Wakefield to York had been in contact with over 50 citizens of York before he was discovered to be suffering from small-pox. The match would necessarily be instrumental in introducing a very large number of Dewsbury people into York, so that the efforts of the public health authorities were very reasonable. All attempts to cancel the match unfortunately failed, but the health committee succeeded in persuading the North-Eastern Railway Company to refuse the convenience of any excursion trains for that day, and there was also circulated in the *Yorkshire Chronicle* the day before the match a statement signed by the medical officer of health warning the citizens of York of the danger which they would incur in attending the match. Efforts were made to persuade the members of the York team to submit to revaccination before engaging in the match and when these proved unsuccessful the medical officer of health insisted upon regarding the team as "contacts" for 18 days, disinfected all their clothes at the end of the match, and disinfected the dressing rooms of both teams. It certainly seems absurd that in all the circumstances the match could not have been postponed.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 76 of the largest English towns 8366 births and 4270 deaths were registered during the week ending Sept. 16th. The annual rate of mortality in these towns, which had been 17·3, 17·3, and 16·1 per 1000 in the three preceding weeks, further declined to 14·3 per 1000 last week. In London the death-rate was 13·2 per 1000, while it averaged 14·7 per 1000 in the 75 other large towns. The lowest death-rates in these towns were 5·6 in Hornsey, 6·2 in Coventry, 6·8 in Handsworth (Staffs.), 7·5 in Wallasey, 7·7 in Aston Manor, 7·8 in Rotherham, 8·1 in Reading, and 8·9 in East Ham; the highest rates were 20·8 in Sunderland, 21·2 in Stockport and in Oldham, 21·7 in Middlesbrough, 22·9 in Stockton-on-Tees and in Gateshead, and 24·9 in Great Yarmouth. The 4270 deaths in these towns last week included 821 which were referred to the principal infectious diseases, against 1578, 1432, and 1090 in the three preceding weeks; of these 821 deaths 612 resulted from diarrhœa, 63 from whooping-cough, 46 from diphtheria, 39 from scarlet fever, 34 from "fever" (principally enteric), and 27 from measles, but not any from small-pox. No death from any of these diseases was registered last week in Handsworth (Staffs); in the other towns they caused the lowest death-rates in Tottenham, Hornsey, Reading, Devonport, King's Norton, Coventry, Derby, and St. Helens; and the highest rates in Great Yarmouth, Wolverhampton, Smethwick, Bootle, Wigan, Burnley, Preston, Sunderland, and Gateshead. The greatest proportional mortality from measles occurred in Barrow-in-Furness; from scarlet fever in Birkenhead and Bootle; from diphtheria in Gateshead; from "fever" in Wigan; and from diarrhœa in Great Yarmouth, Wolverhampton, Smethwick, Stockport, Warrington, Burnley, Preston, Sunderland, and Gateshead. The mortality from whooping-cough showed no marked excess in any of the large towns. No fatal case of small-pox was registered last week in any of the large towns and no small-pox patients were under treatment in the Metropolitan Asylums Hospitals at the end of last week. The number of scarlet fever cases under treatment in these hospitals and in the London Fever Hospital on Saturday last, Sept. 16th, was 3150, against 2762, 2873, and 2982 at the end of the three preceding weeks; 469 new cases were admitted last week, against 343, 427, and 443 in the three preceding weeks. The deaths in London referred to pneumonia and diseases of the respiratory system were 113, against 118, 131, and 133 in the three preceding weeks, and were 28 below the number in the corresponding period of last year. The causes of 48, or 1·1 per cent., of the deaths in the 76 towns last week were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in West Ham, Bristol, Leicester, Nottingham, Salford, Leeds, Sheffield, Newcastle-on-Tyne, and in 43 other smaller towns; the highest proportions of uncertified deaths were registered in Birmingham, Liverpool, Burnley, Blackburn, and Sunderland.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in eight of the principal Scotch towns, which had been 14·0, 14·8, and 14·0 per 1000 in the three preceding weeks, rose again to 15·0 per 1000 during the week ending Sept. 16th, and was 0·7 per 1000 above the mean rate during the same period in the 76 large English towns. The rates in the eight Scotch towns ranged from 10·7 in Perth and 11·0 in Paisley, to 15·6 in Greenock, and 16·6 in Glasgow and in Leith. The 503 deaths in these towns last week included 32 which were referred to diarrhœa, 11 to diphtheria, ten to whooping-cough, ten to "fever," five to scarlet fever, and three to measles. In all 71 deaths resulted from these principal infectious diseases last week, against 91, 96, and 69 in the three preceding weeks. These 71 deaths were equal to an annual rate of 2·1 per 1000, which was 0·6 per 1000 below the mean rate last week from the same diseases in the 76 large English towns. The fatal cases of diarrhœa, which had been 61, 63, and 41 in the three preceding weeks, further declined last week to 32, of which 19 occurred in Glasgow, four in Edinburgh, three in Aberdeen, three in Leith, and two in Dundee. The deaths from diphtheria, which had been six and four in the two preceding weeks, rose again to 11 last week and included seven in Glasgow, two in Edinburgh, and two in Dundee. The fatal cases of whooping-cough, which had 18, 14, and nine in the three preceding weeks, rose last week to ten, of which four were registered in Glasgow, two in Edinburgh, and two in Greenock. The deaths referred to different forms of "fever," which had been one, four, and six in the three preceding weeks, further increased to ten last week and included four in Glasgow and two in Edinburgh; two of these four deaths in Glasgow were attributed of typhus fever and one fatal case of this disease occurred also in Dundee. The deaths from scarlet fever, which had been two in each of the three preceding weeks, rose last week to five, of which two occurred in Glasgow. The fatal cases of measles, which had been nine, seven, and seven in the three preceding weeks, further declined to three last week, and

included two in Glasgow. The deaths referred to diseases of the respiratory organs in these towns, which had been 44, 53, and 60 in the three preceding weeks, further rose last week to 63, and were eight in excess of the number in the corresponding period of last year. The causes of 16, or more than 3 per cent., of the deaths in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 19·8, 22·0, and 18·4 per 1000 in the three preceding weeks, further declined to 16·2 per 1000 during the week ending Sept. 16th. During the past four weeks the death-rate has averaged 19·1 per 1000, the rates during the same period being 15·8 per 1000 in London and 14·0 in Edinburgh. The 118 deaths of persons belonging to Dublin registered during the week under notice were 16 below the number in the preceding week, and included 12 which were referred to the principal infectious diseases, against 27, 23, and 17 in the three preceding weeks; of these ten resulted from diarrhœa, one from scarlet fever, and one from "fever," but not any from small-pox, measles, diphtheria, or whooping-cough. These 12 deaths were equal to an annual rate of 1·7 per 1000, the death-rates last week from the principal infectious diseases being 2·7 per 1000 in London and 1·5 in Edinburgh. The fatal cases of diarrhœa, which had been 25, 19, and 12 in the three preceding weeks, further declined last week to ten. The deaths from "fever," which had been one and four in the two preceding weeks, declined again to one last week. The 118 deaths in Dublin last week included 33 of children under one year of age and 23 of persons aged 60 years and upwards; the deaths of infants showed a slight decline, while those of elderly persons were considerably below the number in the preceding week. Five inquest cases and four deaths from violence were registered; and 36, or nearly one-third, of the deaths occurred in public institutions. The causes of eight, or nearly 7 per cent., of the deaths registered in Dublin last week were not certified.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments are notified:—Fleet Surgeons: A. J. Pickthorn to the *Glory*; E. R. D. Fasken to the *Hood*; and J. M. Rogers to the *President*, additional, for survey of stores at Deptford. Staff Surgeon T. T. Jeans to the *President*, for three months' course of study at the West London Hospital. Surgeons: E. S. Reid to the *President*, additional, for survey of stores at Deptford; R. H. Atkins to the *Pembroke*, additional; and A. K. Smith-Shand to the *Wildfire* and lent to Yarmouth Hospital.

ROYAL ARMY MEDICAL CORPS.

Captain E. T. Inkson, V.C., Captain F. Harvey, and Captain H. C. R. Hime have joined at Aldershot and are attached to the Depôt and Training School for a course of instruction. Lieutenant-Colonel S. F. Freyer, C.M.G., doing duty at the Cambridge Hospital, Aldershot, is selected for duty as Medical Officer in charge of the Surgical Division at the Royal Victoria Hospital, Netley, vice Lieutenant-Colonel G. H. Sylvester. Lieutenant-Colonel R. H. Moore has joined at Aldershot for duty and is appointed Medical Officer in charge of the Isolation Hospital, Thorn Hill.

Captain Henry H. Scott resigns his commission (dated Sept. 16th, 1905).

INDIAN MEDICAL SERVICE.

Colonel H. Hamilton, C.B., is appointed Honorary Surgeon to the Viceroy, vice Colonel Bookey, C.B., retired.

VOLUNTEER CORPS.

Royal Garrison Artillery (Volunteers): 1st Lincolnshire: Surgeon-Lieutenant G. H. Grimoldby resigns his commission (dated Sept. 16th, 1905).

DEATHS IN THE SERVICES.

Major Harold Arthur Stalkartt, R.A.M.C., on Sept. 11th at Kailana, India, aged 37 years. He joined the service in 1892, was promoted captain in 1895, and major in 1904.

SANITARY EFFORT IN THE ARMY.

On p. 903 of our current issue we refer to the presidential address in the section of Naval and Military Hygiene at the recent London Congress of the Royal Institute of Public Health which was delivered by Lieutenant-Colonel R. H. Firth, R.A.M.C., professor of hygiene in the Royal Army Medical College. The subject is one of great importance not only in itself but also in its inter-relation to the sanitation of civil life, and the views of Colonel Firth on the matter will be discussed with the serious attention which they deserve. He proposes that a sanitary bureau should be established in the War Office as a section of the office of the Director-General of the Army Medical Service which should be controlled by an officer thoroughly conversant with the whole theory and practice of preventive medicine. This officer should administer and be responsible for the sanitary organisation of the army.

PENSIONS AND ADMIRALTY LIABILITY.

A point of considerable interest to naval men and their families has just been decided by the Admiralty. A few months ago a petty officer on the *Cumbridge* at Devonport drank some water which is believed to have been contaminated from a tap at Trevol. Enteric fever followed, which terminated fatally. An appeal for a pension, which the widow forwarded to the Admiralty, was unsuccessful, but in a second appeal the point was urged that the deceased's death was due to his drinking water provided for him by the Admiralty and that the use of the tap from which the water was drawn had since been officially prohibited. The Admiralty recognised the justice of this, and granted the widow a pension of 7*s.* 6*d.* weekly. Mr. G. A. Rae, L.R.C.P., L.R.C.S. Edin., J.P., rendered much assistance to the widow in pressing her claim.

JAPAN AND THE PEACE.

According to a Reuter's special service telegram from Kun-shu-lin, dated Sept. 16th, the armistice became effective on that day. The outposts in front of the main positions on both sides moved back about a verst and henceforth display the white flag. The management of the "General" Red Cross Society has just issued a report of the work done. The number of beds provided was 30,000. There were, besides these, 20 hospital trains, and the expenditure has totalled 22,000,000 roubles during the war. The minor hospital organisations are already leaving, and with the definite ratification of the peace treaty the entire society will be released.

OPENING OF THE MEDICAL SCHOOLS.

WINTER SESSION, 1905–06.

(*Continued from p. 848.*)

LONDON.

Royal Dental Hospital.—The session will open on Oct. 2nd.

National Dental Hospital.—The session will open on Oct. 2nd.

PROVINCIAL.

University of Birmingham.—The session will be inaugurated by a conversazione on Oct. 2nd.

University College, Bristol.—The session will open on Oct. 2nd.

University College, Cardiff.—The session will commence on Oct. 3rd.

University of Durham.—The session will open on Oct. 2nd

University of Leeds.—The session will commence on Oct. 2nd.

University of Liverpool.—The session will begin on Oct. 2nd.

University of Manchester.—The session will commence on Oct. 2nd.

University of Sheffield.—The session will open on Oct. 2nd.

SCOTLAND.

University of Aberdeen.—The session will commence on Oct. 16th.

University of St. Andrews (United College of St. Andrews and University College, Dundee).—The session will open on Oct. 16th.

University of Edinburgh.—The session will begin on Oct. 17th.

University of Glasgow.—The session will begin on Oct. 19th.

Anderson's College, Glasgow.—The session will begin on Oct. 19th.

St. Mungo's College, Glasgow.—The session will begin on Oct. 19th.

Queen Margaret's College, Glasgow.—The session will begin on Oct. 19th.

Correspondence.

"Audi alteram partem."

THE TECHNIQUE OF THE EXAMINATION OF THE SPUTUM FOR TUBERCLE BACILLI.

To the Editors of THE LANCET.

SIRS,—In following the correspondence upon this subject in your columns I have been struck by the want of discrimination between the essentials of the procedure and the artistic *et ceteras*, such as cover-slips and silk handkerchiefs, which have commended themselves to the writers. The object in view is to find out whether the tubercle bacillus is or is not present in the sputum. The preparation of an artistic microscopic slide is unnecessary, since there is no question of getting "marks for neatness." The staining of tubercle bacilli in sputum, while of the greatest importance, is at the same time really a very simple procedure and *should not take more than three minutes to do*, and yet one writer is pleased that he can do it in ten minutes and another leaves the carbol-fuchsin on the slide for seven minutes, while "E. T." in your last issue does it in four and a half minutes.

In 1891, when I was "clerking" at St. Bartholomew's, my house physician used, I remember, to demonstrate that six minutes was ample time for the complete process—and this in the old days of staining on the cover-slip! This morning I asked Dr. C. E. Wheeler of this sanatorium to act as time-keeper for me and found that the process I now employ could be completed in two minutes and 40 seconds, beginning with the sputum in the mug and the lamp unlit and ending with finding the bacilli under a $\frac{1}{12}$th-inch oil immersion. No doubt the time could be shortened still further but I do not think really effective work could be done in much under two minutes and 40 seconds. By effective work I mean that the bacilli should be deeply stained by carbol-fuchsin and that everything else should be completely decolourised and counter-stained with blue.

I use the following method: 1. A piece of sputum is "snatched" with a fine pair of forceps. Whether the piece is larger or smaller is unimportant. 2. This is well rubbed up and down over two-thirds of the surface of a clean slide which has been previously rubbed with fine emery paper. This gives an irregular smear of varying thickness. The remaining sputum is swept off the slide with the forceps. 3. The smear is fixed by heating in the flame. 4. Holding the slide in the fingers by the clean third, hot carbol-fuchsin is poured on from a test tube and run off. I do this twice but I believe once is sufficient except on very cold days. 5. The slide is rinsed and dropped into a Petri dish containing 20 per cent. hydrochloric acid and the dish shaken gently on the table till the decolourisation is complete. If much red shows up on subsequently washing the slide it must be returned to the acid, but a little practice will soon educate one's judgment. 6. The slide is taken from the acid, rinsed, dipped as quickly as possible in and out of a small bottle of blue (methylene blue, 0·5 gramme; solution of caustic potash, 1 in 1000, 45 cubic centimetres; and alcohol, 5 cubic centimetres), rinsed and dried, first between blotting paper and then over the flame. It is now ready for the microscope and of course no cover-slip is used.

One writer, I note, uses a black vulcanite dish for selecting the portion of sputum to be examined. He will, I think, find a Petri dish, placed over a black surface, as useful and much easier to clean. A small deal table, covered with white waterproof, shiny side up, over which a sheet of ordinary window glass is laid, makes a good working table, and a piece of black paper eight inches square placed under the glass in a convenient situation gives the black surface desired. The smear, obtained as described above, enables a relatively large quantity of sputum to be examined—much more than could ever be got under a cover-slip. If parts of the smear are too thick they may be disregarded. These will get fewer with practice. For heating the carbol-fuchsin I use a test-tube made into a U tube with one large limb and one almost capillary limb. This is made by heating a test-tube one-third of its length from the bottom in the flame and drawing it out and turning the resulting fine tube upwards. This requires a little practice. It is important that the hot glass should be removed from the flame before the manipulation is commenced. The bottom of the test-tube—now at the upper end of the capillary limb of the U tube—is cut off and the last inch of the fine tube is then heated and bent outwards at right angles. The carbol-fuchsin is heated in this tube and dropped through the fine limb of the U tube on to the slide. By touching the surface of the slide with the end of the fine tube and depressing the larger limb the whole of the fluid on the slide will then be sucked back into the tube and is then ready for use again.

In staining slides for the estimation of opsonic indices, a tedious and laborious task in which every minute that can be saved is of importance, I put six or more slides in a row across a small tin trough and with one heating of carbol-fuchsin pour a few drops on each, beginning on the left. I then syphon off all fluid from each, as described above, beginning again on the left, and all the slides are then stained and ready for decolourisation. In regard to rinsing the slides I have found a bucket on the floor by my side and a jug of water quite effective and I do not "walk one yard" or trouble about "Higginson's syringes" and "gentle streams." The method I use I know from experience to be effective. That it takes less time than any that has previously been given in this correspondence is my excuse for describing it. There is nothing new about it and certainly nothing that is original. The emery paper for preparing slides was first recommended by Professor Wright. The plan of using carbol-fuchsin and the making of the tube were shown to me by Captain Douglas, I.M.S.

I am, Sirs, yours faithfully,

HAROLD MEAKIN, M.D. Lond., Captain, I.M.S.

Nordrach-upon-Mendip Sanatorium, Sept. 18th, 1905.

To the Editors of THE LANCET.

SIRS,—The principles of the staining method now usually employed for demonstrating tubercle bacilli in sputum are perfectly definite and are based upon well-known characters of the bacillus—viz., that it stains with difficulty, and that when once stained it is equally difficult to decolourise, being both acid and alcohol fast. As the communications appearing in your columns have shown, considerable variation in the minutiæ of the technique is allowable and, as a matter of fact, in this as in most other established laboratory methods, each observer tends to evolve for himself a particular procedure dictated by the circumstances under which he works and his personal predilections. My experience in my own work, and that gained in observing other, has convinced me that the crucial question is not the staining but the preparation of the films preparatory to staining. Provided that tubercle bacilli are present in the preparation any method which complies with the essential conditions will suffice to demonstrate them, but hastily or badly made specimens cannot be compensated for by any amount of subsequent care. The selection of the material with which the film is prepared is, I therefore think, of the first importance, and the time taken in making a good preparation is well spent. In my own work this part of the investigation frequently occupies ten or 20 minutes, especially in early and doubtful cases, but I find that it is really a saving of time in the end, as if the bacilli are to be found at all they are usually met with in the first film examined. Out of 925 consecutive cases of suspected pulmonary tuberculosis I find that I have been able to make a correct diagnosis from the examination of the sputum in all but 59, although I have from time to time followed different methods of staining and decolourising, &c.

I am, Sirs, your faithfully,

P. J. CAMMIDGE.

Beaumont-street, Portland-place, W., Sept. 18th, 1905.

THE PYGMIES.

To the Editors of THE LANCET.

SIRS,—I am pleased to see from Sir Harry Johnston's letter in THE LANCET of Sept. 16th that he is "not dogmatic" as regards the pygmy "having no language." I quoted from a paragraph I saw in one of the daily papers, and although we are all indebted very much to Sir Harry Johnston for his able works and fresh knowledge he has been able to bring forward with regard to Africa, still I cannot agree with him that the negro race certainly originated in Southern Asia, possibly India ("The Uganda Protectorate"). I contend that the human race originated from Africa, the Nile Valley and its sources, and that the pygmy was the "first and oldest man," and that the "pygmy language" was the first and original. But language alone will not solve the

question although it helps, and if I am correct then the original pygmy language would be impressed on all the forest-dwelling negroes, as a basis first, for further improvements in sounds, &c., and more than this, wherever the pygmy first emigrated and settled he would leave some trace of his language. Those who have studied and written on the "science and origins" of language have discussed it without the ideographic symbols and their gesture-signs being even taken into account. These must take their root from inner Africa and not, as the Aryanists have laboured to show, in Asia. The inner African languages prove that words had earlier forms than those which have become the "roots" of the Aryanists; and there is no way of getting back to the origin of words except by learning once more to think in things, images, ideographs, hieroglyphics, and gesture-signs, and the primary modes of expression must be sought in their birth-place—and that is Africa—for here only shall we find the earliest rudimentary articulation of human sound, which accompanied gesture-signs and preceded verbal speech, and in these gesture-signs and ideographic symbols we find the earliest language is visible figures. How important, therefore, it is to get back to the original of all that has been pictured as figures made primarily by the earliest man and then to decipher the same. These are the true radicals of language without which the philologist has no final and adequate determinative and yet these have been left outside the range of discussion by the Aryan school, but the doctrine is prevalent in current philology, whilst the earliest sign language has been ignored altogether.

Whenever the ideographic signs of the oldest civilised nations can be compared evidence of the original unity becomes apparent, and if we take the earliest inhabitants of any part of the world we find from the skeletons that these were all of the same class—negroid. This is proved by the shape of the bones, the flattened tibia, the shape of the skull, &c. All their totemic signs, ceremonies, implements, gesture, language, &c., were the same and the farther we go back the nearer we get to some central unity. If we take the totemic ceremonies of the Australian aborigines, New Zealanders, North American Indians, Ainus, and Nilotic negroes, we find that these are all the same. Such numerous and striking similarities between these ancient totemic rites and early religious and burial rites, &c., the relics of which are to be found all over the world, conclusively prove that they must have been derived from one original, and there is no logic, fact, reason, nor any argument to be advanced which could prove that the various aborigines—the Australians, North American Indians, West Coast tribes, &c.—had evolved their religion and religious ceremonies from their own surroundings and experience. The sign for Amsu and the Khui Land and Zodiacal West found all over the world, dating back to the remotest antiquity, proves that Egypt must have been the original centre and that the pygmy was the "first man" making use of the sign as I have before depicted for their chief—which was afterwards carried throughout the world—and is found in many countries, as I have stated before. And, moreover, the "sacred dance," when the chief dances around in a kind of zig-zag circle, followed closely by another, and suddenly turns round and tries to overthrow him with his right foot and leg, but does not at first, then tries again and overthrows him, when the dance ends, is probably the origin of the great battle of Horus and Sut—the great fight between light and darkness which ultimately evolved into the great fight between the serpent, &c., which we find in every country and every creed from all times. But there is much more to learn from these little people, but one must live amongst them for some considerable time, as Sir Harry Johnston rightly says.

I am, Sirs, yours faithfully,

ALBERT CHURCHWARD.

South Norwood, S.E., Sept. 18th, 1905.

THE CAUSATION OF APPENDICITIS.

To the Editors of THE LANCET.

SIRS,—The causation of appendicitis is still, I take it, a subject open to discussion. The usually accepted etiological factors, based as they are upon local variations in the appendix and its neighbourhood, cannot be regarded as satisfactory. It seems to me that to attribute appendicitis to any local cause is to disregard our experience of other acute conditions, such as acute sinusitis for example, when this disease occurs, as it often does, suddenly in a healthy young subject; is it put down to some local cause or is it ascribed to one or other of several well-known general processes, such as influenza? Of course, the latter.

As a matter of practice, when confronted with any acute local process in otherwise healthy young people it is an excellent working principle to search for some general factor, for apart from general diseases the tendency of the young organism is undoubtedly towards health, not disease. A case of acute otitis media comes before us and we suspect scarlet fever or influenza; or sore-throat is the most prominent symptom, and diphtheria or scarlet fever looms up; or there are several swollen joints and acute rheumatism is to be thought of, and so on. In short, neither otitis media, sore-throat, nor swollen joints are regarded as entities. Are we right in regarding appendicitis as such? Does it not seem more probable that it is simply one of the local manifestations of a general disease? I think so, and the burden of this letter is that appendicitis is one of the manifestations or sequelæ of influenza, a conclusion arrived at from many considerations of which the following are a few.

1. *The existence of a grand common factor in that both diseases virtually cover the same historical period.*—The key to the causation of appendicitis must lie in some factor which has been practically constant during the last 20 years and practically absent the previous 20 years; for appendicitis is essentially a disease of the last 20 years. Mr. S. Kellett Smith, in a letter in THE LANCET of June 27th, 1903 (p. 1839), suggested that the ingestion of chilled or frozen food supplied this factor, and his suggestion is certainly (as you have commented) a very plausible one. Nevertheless, I would suggest that the theory that influenza stands in some causal relation to appendicitis is even more plausible and that the facts of appendicitis, viewed from this standpoint, receive an explanation which has not hitherto been accorded them. The statement that appendicitis is essentially a disease of the last 20 years applies equally to influenza. True, there were epidemics of influenza before 1889, and Fitz described appendicitis in 1886, but these diseases were not then matters of daily practice as they are at present. I warrant it that if a general practitioner of 40 years' standing were asked what distinguished the last half of his practice from the first he would say the frequency of influenza and appendicitis during the second 20 years, in comparison with their rarity, or almost complete absence, during the first period.

2. *The analogy that exists between appendicitis and certain acknowledged influenzal affections, e.g., acute sinusitis, otitis media, and cerebral abscess.*—Appendicitis in its symptoms and course resembles many diseases which are admittedly manifestations of influenza, e.g., acute sinusitis. The analogy is really very striking if we look upon acute sinusitis as an entity as appendicitis has been regarded hitherto. Both are practically diseases of the last 20 years. Both begin suddenly with great pain. Both end sometimes in resolution, sometimes in pus formation. In both the local often obscure the general symptoms.

3. *The apparent alternation of influenza and appendicitis in the same patient.*—There has been an attack of influenza with, say, an eye complication. A year or so later the patient is thought to have another attack of influenza which turns out to be appendicitis, or the converse has occurred, one or several attacks of appendicitis without any suggestion of influenza, and then a definite attack of influenza with aggravation of the appendical symptoms.

4. *The agreement in the age incidence of the two diseases.*—Influenzal and appendical subjects, though not strictly limited to any age period, agree in being chiefly drawn from active young adults. Appendicitis is relatively rare in childhood, which is true also of influenza, and the latter disease, though more serious when attacking the aged, cannot be said to show them any preference, which is generally true of appendicitis.

5. *Influenza in its epidemic form is acknowledged to be sometimes responsible for a gastro-enteritis*, thereby showing that though known to prefer the respiratory tract, there is no obstacle to its affecting the alimentary canal.

The broad facts of appendicitis are—its prevalence of recent years; its occurrence in grades of severity, catarrh in one case and pus formation in another; its tendency to recur; and its preference for young adults. These it will be seen are also the broad facts of influenza and indicate that there is possibly more than a passing connexion between the two affections and that probably appendicitis in the majority

of cases claims influenza as its cause and that the latter in some cases expends its force upon the appendix.

I am, Sirs, yours faithfully,

J. C. PARST, M.D. Melb.,
Honorary Physician and Honorary Ophthalmic Surgeon, Auckland Hospital, N.Z.

Auckland, New Zealand.

To the Editors of THE LANCET.

SIRS,—Appendicitis has of late years become so general that individual opinion as to the probable cause and prevention should be of interest to the readers of THE LANCET, and in behalf of public health and of common humanity I venture to address this communication to you. The lowering of the tone of the large intestine through the habitual use of purgative drugs is to my mind a very great factor in causing appendicitis. A very large number of persons are apt to indulge over freely in the delicacies of the table and at the same time take an insufficiency of exercise and consequently resort is too often made to a habitual use of purgatives to prevent the effects of an overloaded system or to relieve constipation. With the large number of purgative drugs and quack medicines in the form of tablet, pill, or syrup, offered to the public the desired effect is easily obtained, for if one purgative tablet, pill, pilule, or syrup should prove ineffective another form can at once be resorted to without a thought for the ultimate future result. The drugs which are used in the compounding of such tablets and quack medicines are, for the most part, aloes, aloin, and cascara sagrada, all with a well-defined action, principally upon the large intestine, causing increased peristalsis. Senna and rhubarb are also akin in their action to the above-mentioned drugs and are also used to stimulate intestinal movement. Purgatives of this description must enervate and break down the tone of the bowel by repeated and frequent use. The constant resort to enemata must also have a like effect.

It is well known that purgatives lose their efficient power after a time of continued use and larger and larger doses or stronger and stronger drugs have to be resorted to, for the intestine becomes habituated to the requirement of a stimulant to enable it to perform its duty, even as the habitual drunkard requires increased potions to fit him to face his duties. There can be no doubt that progressive atony of the appendix takes place *pari passu* with that of the colon and the appendix being a rudimentary organ and a *cul de sac*, suffers more from the effects of atony than the rest of the intestine, which has a considerable driving power, so to speak, behind it. The appendix is not able to expel its contents, fæcal accumulation and concretion take place, and gaseous distension arises from decomposition of its contents and in course of time an attack of appendicitis occurs. Of course, the essential point is to establish such a habit of daily evacuation that there may not be accumulation of the noxious waste. Now, how is this to be effected? Most certainly not by the constant use of drugs which act upon the colon for the reasons I have stated above, as atony or degeneration due to over-stimulation may be engendered. If purgatives must be resorted to then the use of saline laxatives should be adopted, as their mode of action is to disturb the process of osmosis, bringing about an increased flow of secretion, rather than to stimulate peristalsis. The action of saline purgatives by disturbing the process of osmosis and causing an increased flow of water from the intestinal vessels into the cavity of the bowel brings about an increased liquidity in the stools. The salines are also absorbed by the blood vessels and partly carried into the general circulation and partly again excreted into the bowel by the intestinal glands, the result being a liquid stool in which peristalsis does not play an important part.

If drugs are used which increase peristalsis the appendix partakes in the general action and the habitual use of such drugs brings about atony and degeneration and the appendix loses power in emptying itself; but if saline laxatives, which disturb the process of osmosis, are resorted to the vessels and glands of the mucous lining of the appendix act in conjunction with the other intestinal vessels and glands, causing a watery flow, and consequently the flushing out of the appendix takes place. Have not saline purgatives been recommended in certain stages of appendicitis? Is it not good treatment for a patient suffering from chronic constipation to persist in the use of saline laxatives even to the verge of diarrhœa and in order that the lost tone of the bowel may be brought back to combine such laxatives with strychnia, or nux vomica, or iron, or belladona? For habitual constipation, instead of aloes, aloin, cascara sagrada, and quack aperient medicines which for the most part contain these drugs, are there not plenty of saline aperients which can be effectively used by the public in a general way?

To summarise, the increase in cases of appendicitis is due to the growing habitual use of such purgative medicines as cascara sagrada aloes, and aloin, which relieve constipation and empty the intestine by peristalsis, thereby causing loss of tone with all its concomitant symptoms, the remedy being—if drugs must be resorted to—the use of saline laxatives which disturb the process of osmosis and do not lower the tone of the bowel but act by causing an increased flow of intestinal juices.

I am, Sirs, yours faithfully,

FREDERICK W. ALEXANDER,
Medical Officer of Health of Poplar.

Public Health Offices, Bow-road, Bow, E., Sept. 18th, 1905.

THE MEDICAL MAN, THE CORONER, AND THE PATHOLOGIST.

To the Editors of THE LANCET.

SIRS,—I have read your annotation on the above subject in your issue of to-day and entirely agree with it. During the 28 years I have been coroner I have made it a rule to have called as witness the medical man who first saw the dead body. Both the reasons you give for this rule are well worthy of consideration.

I am, Sirs, yours faithfully,

A. F. VULLIAMY,
Coroner for Suffolk.

Ipswich, Sept. 16th, 1905.

To the Editors of THE LANCET.

SIRS,—Among the "annotations" in THE LANCET of Sept. 16th is one in connexion with a recently held inquest in the south-western division of London, which you conclude with the observation that "this case is another of those to which Mr. Troutbeck's *excuse* that special skill is needed in some cases in order to elucidate the cause of death can in no way apply." The word (which I have ventured to italicise) is happily chosen, for as it appears to me (and many other coroners) much excuse is needed before the line habitually taken by Mr. Troutbeck can be justified. There are many cases which form the subject of an inquest in which it becomes necessary to summon the assistance of an expert analyst to make a reliable investigation of the contents of the stomach, the bowels, or the blood. Would this afford an "excuse" for summoning such an expert witness in every instance? The contention would be absurd and is it not equally absurd to pretend that because an expert *pathologist* may be *sometimes* needed such should be *always* called? Surely the average medical practitioner who has obtained his diploma or degree, not without a stiff examination in pathology, may be trusted as fully as any specially skilled pathologist to conduct an ordinary post-mortem examination in order to establish (say, after *physical* injury) whether death was caused by the rupture of some important organ, fracture of the base, gun-shot wound producing hæmorrhage and shock, strangulation, foreign body in the larynx, or cut throat, and, say, after suspected natural causes, cardiac, pulmonary, hepatic, cerebral, or other internal mischief? But, further, it appears to me (and to many other coroners) that Section 21 of the Coroners Act of 1887, subsection 1, distinctly *implies* that the medical officer called in "*at* his death" should, in the first instance at all events, apply to those who first had the opportunity of seeing "the deceased," whether immediately before or after the last breath was drawn seems immaterial, for otherwise the words that follow would be devoid of meaning: "If it appears to the coroner that the deceased person was not attended *at* his death," *then* the coroner *may* summon "any legally qualified medical practitioner," &c.

However this may be, it has fortunately long been usual for the police to inform the coroner what medical man (if any) had recently before or "*upon the occasion*" of his death visited the deceased and equally customary for the coroner, in the absence of any special reason to the contrary, to summon such medical man as a witness. No medical coroner can entertain any doubt as to the propriety of this; the position and surroundings of the body, the *state* of the body at the moment of inspection, the presence or absence

of ephemeral signs which may have vanished before the "expert pathologist" can be obtained, all point to the value of the *earliest* medical witness on the scene being the one most likely to supply the needful information. And, curiously enough, in another column of THE LANCET this very week is to be found an instance bearing strongly on the point,[1] in which you say: "And it would have been concluded that he met his death by drowning had not the fact been noted by the medical witness that the eyelids were closed when the body was discovered." If the "medical witness" had been Mr. Troutbeck's "skilled pathologist" (who would have had no opportunity of seeing the deceased till he received Mr. Troutbeck's order to make a post-mortem examination) this fact could scarcely have been "noted by the medical witness"—but it is needless to multiply examples. Mr. Troutbeck's view of the coroner's "excuse" is doing yeoman service for the medical profession, and the constantly increasing numbers of medical practitioners who are selected by the county councils (in preference to legal gentlemen) to fill the important office of coroner bear witness to the growing recognition among the educated classes that nine times out of ten "the medical cause of death," which it is the first duty of the coroner to investigate, is best performed by one who can interpret the technical terms, often *necessarily* made use of by the medical witness, to a jury of average British laymen.

I am, Sirs, yours faithfully,

Sept. 19th, 1905. MEDICAL CORONER.

PS.—I hope you will not think it presumptuous if I add (after reading your article on two cases of recent inquests, the one in South Staffordshire and the other in Lancaster, under the heading "Medicine and the Law") that in my opinion neither would the view that "it was idle to suggest insanity" have been expressed in the one, nor an order for exhumation been publicly called for in the other, had the respective coroners been members of our profession. For in the one the letter laid before the jury would have contained ample evidence to the medical mind of the insane condition of the writer at the time; and in the other I fancy that if the Home Secretary had been (privately) made acquainted with the facts it does not seem unreasonable to think he might not have insisted on exhumation, provided no criminal responsibility had been suggested at the preliminary investigation before the deceased coroner and his jury. Is it conceivable, for example, to take another instance, that the Home Secretary in these days of preventive medicine would censure a coroner who should excuse his jury (of 12 or 15 fathers of a family may be) from viewing the body of a child whose violent death (during tracheotomy, for instance) had revealed the fact that death was due to disease of an eminently infectious character, such as diphtheria? The consequence of an inquest having been held without "the view"—when ample evidence of "identity" is forthcoming—is that the inquest may be "quashed." What reasonable ground for "quashing" can be discovered if no criminal liability had been brought home to anyone by the verdict of the jury?

ANGINA PECTORIS AND ALLIED CONDITIONS.

To the Editors of THE LANCET.

SIRS,—On two points arising out of Dr. T. Oliver's lecture on this obscure subject, published in THE LANCET of Sept. 16th, I desire, with your permission, very briefly to remark. One of these concerns the now well-recognised work of another. I am aware that in a lecture it is not possible to deal with matters historical at any length, but the omission of some names is as inexcusable as the production of *Hamlet* with the melancholy prince left out. After reference to the fact that arterial thrombosis may be attended with pain, Dr. Oliver quotes Charcot's interpretation of these phenomena and his introduction of the term "intermittent claudication," as possibly explaining angina pectoris in some cases. That this is a feasible hypothesis, possibly correct in some cases of an affection which may be symptomatic of many conditions, I am not at present concerned either to deny or affirm. The point I would refer to is that this interpretation was advanced as a brilliant suggestion nearly a century ago by Allan Burns of Glasgow, who must in justice be allowed to have anticipated later writers in advancing the occlusional theory of angina pectoris and whose name one would have expected to transpire in this connexion. In his little book, still so valuable because filled with observations culled at first hand from nature, he deals sufficiently fully with the subject.[1] The explanation was then hypothetical and itis no more now, but to Burns belongs whatever credit there may be in having advanced it.

The other point I refer to less willingly, because it is distasteful to call attention to one's own work. Dr. Oliver, like most writers on this subject since Edward Jenner's day, discusses the question of coronary calcification in relation to angina pectoris. The occasional association of these states is, of course, incontestable. No less incontestable is their frequent dissociation. Quite as incontestable to my mind is the fact that the subject has not been investigated in such a manner as to lead to any definite conclusion on the point. The minute microscopical examination of such vessels in these cases has rarely been undertaken, judging from the reports of necropsies, and they occur quite sufficiently often, both in private and in hospital practice, to have afforded opportunity for such examination. In one of a series of lectures on Cardiac Pain, which I delivered from the same rostrum as that from which Dr. Oliver gave the lecture under discussion, I related some particulars of a case of this kind which occurred in my clinic at the Great Northern Central Hospital and in which I was able to determine what was, to my mind, a significant fact whatever its value. My lectures were fully published, with illustrations, in THE LANCET of Nov. 1st, 8th, 15th, and 29th, 1902. The patient had frequent attacks of angina and died in one of them. The necropsy revealed calcareous arteries, a portion of which I decalcified and numerous sections of which I examined microscopically. Some of these, fortunately, cut across a small intravascular aneurysm in the neighbourhood of which there was a nerve ganglion and neuritic fibres which appeared to me to be an explanation of the very frequent attacks of angina which the patient exhibited both when recumbent and when erect. I carefully refrained from being dogmatic in asserting a necessary connexion between these states but confess that no other condition seemed to me to explain the situation so well and I took it as a type of a condition which has admittedly more than one basis. Whether I was correct or in error in doing so can only be decided by a similar examination of calcified coronaries in cases both associated with, and free from, angina pectoris. So far as I know, my case at present stands alone.

I am, Sirs, yours faithfully,

ALEXANDER MORISON, M.D., F.R.C.P. Edin. & Lond.

Upper Berkeley-street, W., Sept. 17th, 1905.

To the Editors of THE LANCET.

SIRS,—In the course of his interesting and instructive remarks in THE LANCET of Sept. 16th on the treatment of angina vera Dr. T. Oliver states that of all drugs that give relief there is none that can compare for immediate action and efficacy with nitrite of amyl, while in some cases of angina vera nothing short of the administration of morphine or opium will give relief. There is one drug which compares favourably with nitrite of amyl in the treatment of angina pectoris and that is chloroform. The inhalation of chloroform removes the strain from the heart by vasomotor dilatation of the arterioles much more safely and effectually than does nitrite of amyl. Moreover, chloroform has none of the disadvantages of nitrite of amyl and as it abolishes pain almost immediately neither morphine nor opium is necessary. The inhalation of chloroform need not be pushed beyond the stage of unconsciousness and, unless the heart is actually failing, it always gives complete relief.

I am, Sirs, yours faithfully,

Harley-street, W., Sept. 19th, 1905. EDWARD LAWRIE.

THE CONDITION OF THE BLOOD VESSELS DURING SHOCK.

To the Editors of THE LANCET.

SIRS,—I agree with Mr. J. P. Lockhart Mummery that a full discussion of our divergent views on this subject would take up more of your space than we can hope for, but I should like to be permitted to reply to his letter in your

[1] THE LANCET, Sept. 16th, 1905, p. 842, The Eyelids after Death.

[1] Observations on Diseases of the Heart, &c., Edinburgh, 1809, p. 138.

last issue[1] and to endeavour to convince him and your readers that the theory I have put forward explains the phenomena under consideration better than any other.

Mr. Mummery's first point is to explain the absence of suffusion of the skin with blood as a consequence of dilatation of the vessels in the state of shock. He says that this occurs only "*when the general blood pressure is still high.*" But a combination of a high blood pressure in the central areas with dilatation of the peripheral vessels seems to me very unlikely to occur under any circumstances. It is the tone of the distal vessels that keeps the blood pressure up, and the large vessels are so elastic that if a gradual relaxation of the arterioles takes place from any cause and ultimately becomes complete there must, I think, be a stage during which an obvious suffusion of the surface would be expected. Mr. Mummery wrote[2] "that the exhaustion of the vaso-motor centre is not a sudden process but takes place slowly, the vessels in the splanchnic area first becoming dilated. And in the earlier stages of shock contraction of the peripheral vessels occurs to compensate if possible for the fall in blood pressure brought about by the dilatation of the splanchnic blood vessels." But he also wrote[3] that "the first effect produced upon the blood pressure by injury to any part of the body richly supplied with nerve endings ..... is a rise. If the injury is continued or is very severe this initial rise is either replaced by a fall in blood pressure or is followed by a fall." From this I conclude that, in the first instance, the contraction over-compensates the relaxation of the arteries and this initial rise of blood pressure makes it the more difficult to understand the absence of a stage of suffusion of the surface if the arteries gradually dilate.

As regards the second paragraph of Mr. Mummery's letter I regret very much if I misrepresented his and Dr. G. W. Crile's views in discussing the change from contraction to relaxation of the vessels when shock occurs. Dr. Crile wrote that the cause of the fall of blood pressure, which he invariably found during severe shock, "must be an exhaustion of the cardiac muscle, of the cardiac centres, of the blood vessels or of the vaso-motor centres,"[4] and, *by a process of exclusion*, he selected the last as the true cause. Mr. Mummery wrote[5] that "the essential factor in the production of the condition which we know as shock is a steady fall in general blood pressure. This fall in blood pressure results from exhaustion or fatigue of the vaso-motor centres." I argue that an *exhaustion* of the vaso-motor centre cannot arise and induce a relaxation of the vessels until the tendency to contraction of the vessels has been very powerfully excited. Therefore an intense contraction of the vessels should first occur. If at some stage of the process relaxation takes place suddenly there should, I think, be clinical signs of such a violent change. The change, if it is due to *exhaustion* of the vaso-motor centre, ought to take place suddenly, but if, on the other hand, we assume that it occurs gradually, then the vessels should at first return to their normal size. So long, however, as the degree of shock is deepening there is no evidence of a sudden change from contraction to relaxation, or of a gradual return to the normal. If the vessels gradually dilate without any previous contraction, the condition can hardly be attributed to *exhaustion* or fatigue of the vaso-motor centres.

As regards the obvious condition of the splanchnic vessels I have no experience of experimental work, but I have seen parts of the splanchnic area very frequently when patients have been in a state of profound shock, and I have never noted a dilatation of the small vessels which seemed to me to be caused by shock, whilst I have often observed that there was very little hæmorrhage so long as large vessels were not interfered with. When I have seen these parts suffused with blood by dilatation of the small vessels the cause has generally been some anæsthetic difficulty connected with the respiration. I do not deny—indeed, I asserted in my lecture—that the blood collects in the warmer parts of the body during the condition of shock,[6] but my contention is that "in so far as an unusual amount of blood may be found in the splanchnic area, it is forced rather than drawn into the central parts."[7] This to some extent answers Mr. Mummery's question as to where the blood goes. But if he will read my paper carefully[8] he will see that I cannot agree with him that the blood is incompressible for the purposes under consideration. He pointed out in his lectures that as shock develops the specific gravity of the blood is raised, and this raised specific gravity seems to me quite inconsistent with the view that the vessels are dilated. It indicates rather that the blood is under unusual pressure. The change must, I think, be due to a squeezing of the plasma from the vessels into the tissues. The plasma has a lower specific gravity than the blood. There is no doubt in my mind that if life continues and if this raised specific gravity of the blood is not quickly altered by a return of plasma to the blood-vessels it must very soon lead to a diminution in the number of blood corpuscles and thus a certain amount of blood will be destroyed.

Mr. Mummery finally says that the chief argument against the theory I have put forward is found in the action of adrenalin and similar drugs but I have given an explanation of this action which he does not controvert. Adrenalin is the strongest vaso-constrictor known and if the superficial vessels are intensely contracted, as I believe they are in the state of shock, whilst the internal vessels are full, adrenalin can have little effect on the already intensely contracted superficial vessels but may powerfully affect the somewhat dilated internal vessels and thus may raise the blood pressure in the large systemic arteries exactly as pressure on the abdomen does. The effect is very temporary and I think it may give rise to great danger from cardiac overwork. Mr. Mummery does not mention the chief basis of my criticism of the views he advocates. When Dr. Crile arrived at the conclusion that a fall of blood pressure must be due to relaxation of the arteries from exhaustion of the vaso-motor centres he did so by a *process of exclusion*, but he did not take into consideration all the possible causes of lowered blood pressure. At least he did not mention the possibility that contraction of the vessels may also cause a fall of blood pressure. This contraction of the vessels is the explanation of the vascular phenomena of shock which I advocate and I hope that those who are interested in the subject will carefully consider the evidence I have brought forward.

I am, Sirs, yours faithfully,

Portman-street, Sept. 16th, 1905. JOHN D. MALCOLM.

[1] THE LANCET, Sept. 16th, 1905, p. 852.
[2] Ibid., p. 852.
[3] THE LANCET, March 25th, 1905, p. 776.
[4] Blood Pressure in Surgery, p. 401.
[5] THE LANCET, March 18th, 1905, p. 699.
[6] THE LANCET, August 26th, pp. 576 and 579.
[7] Ibid., p. 573.
[8] Ibid., p. 577.

VARICOCELE—WHAT OF IT?

To the Editors of THE LANCET.

SIRS,—I have for long past desired to initiate a discussion in your columns regarding varicocele with the object of eliciting the views of leading surgeons as to how far, if at all, it is a disability or disqualification for the public services. I have the more reason for requesting expressions of opinion in view of the fact that for a period of five years or more I have been president of the army medical boards for the examination of candidates for admission to Woolwich and Sandhurst, and of university men, militia and yeomanry officers and candidates for commissions in the regular forces, and have seen in those five years no small number among these young men and lads rejected on account of varicocele. The subject of varicocele has also presented itself closely to my notice as senior medical officer of recruiting in the London area (headquarters at St. George's Barracks). As to my own views on the subject I cannot do better than give an extract of a short article I wrote in volume I., page 181, of the *Journal of the Royal Army Medical Corps* with the caption (as our American friends term it) Observations on Some Points in the Medical Regulations for Recruiting:—

> In respect of varicocele the following remarks were made in a report on recruiting by the late Sir Thomas Crawford[1] in the Army Medical Report for 1862: "With a view of determining the extent to which lesions in the genital organs are disqualifications in a soldier, it may be well to premise that it has been generally held by army surgeons that recruits having any disability which can by any possibility interfere with the free motion of the body or extremities or which may give colour to the alleged existence of pain should be rejected. This well-grounded opinion rests on the accumulated experience of the department and is supported by the fact that indifferent characters having such disabilities never fail to allege their existence either as an excuse for the non-performance of duty or for the avoidance of punishment. So long as a soldier can demonstrate the existence of a disease in any organ, so long will it be impracticable to punish him for malingering to avoid his duty, on the one hand, or the penalty of his offences on the other. It is this contingent circumstance *and not any well-grounded belief in the disqualifying nature of many alleged disabilities which leads to the rejection of recruits for blemishes which in no way affect the efficiency of a willing soldier.*"

[1] Director-General A.M.S., whose report was written when he held the rank of staff surgeon and was engaged in recruiting duties.

On the above I wrote as follows: "Now, what does the closing sentence of this extract amount to? To my mind, and probably to the minds of other medical officers, it amounts to this, that, in fact, varicocele scarcely at all affects the ability of a soldier to perform all his duties. I may ask, Have army medical officers ever had officers or soldiers under treatment for varicocele or been obliged to excuse them from any duty on that account? In an experience of *30 years'* service I *never* treated an officer or soldier for varicocele and it would be futile to contend that during this period there did not exist many hundreds who must have had the disability."[2] After my article appeared other army surgeons recorded experience different from mine. Of course, the foregoing transcriptions refer to *recruits*. I am, however, now concerned only with candidates for commissions in the army. It will be interesting to your readers in the civil profession if I quote the phrasing of the army medical regulations for the guidance of medical officers serving on medical boards for the examination of candidates and also for recruits. The former reads thus: "That he [the candidate] does not suffer from ..... varicocele, varicose veins in a severe degree ....., a slight defect if successfully cured by operation is not a disqualification"; in the latter "varicocele beyond a limited extent." That is, the conditions above are considered disabilities within the limits laid down.

Now in support more or less of the views I have expressed I quote the opinion of a senior surgeon of one of the leading hospitals in London who writes to me as follows:—

> I have been lecturing at —— hospital for the last 20 years on the absurdity of calling or treating varicocele as in any sense a disease. I have as surgeon to —— never seen a single instance of dilated veins in the cord producing any real trouble. I have on this account always refused to operate or allow my house surgeons at —— to think of interfering with the cases. The condition is a physiological one and can be seen in all the sheep race of animals (ovis) at the season when they are not rutting. The dilatation retards the flow of blood through the testicle and prevents the testicles being active when not required.

A few days ago I was discussing the subject of varicocele with a distinguished officer of the Indian Medical Service who recently held not only a high position at the India Office but also previously one in a teaching university hospital in India and he has kindly permitted me to record his opinion. It is this: that in the course of 26 years of an extensive and varied practice he recollects advising an operation for varicocele but once, he now forgets why. He does not consider varicocele a disability, and if he were to recommend an operation it would merely be to get over an official regulation which debars admission to the public service on account of varicocele.

It is not necessary, Sirs, for me to point out that the results of operations for varicocele are far from being uniformly satisfactory and that occasionally disastrous consequences have ensued—to wit, atrophy of the testicle. In a very large number of the cases put back by army medical boards for operations, apart from the chronically enlarged testicle which follows, the parents or guardians of the lads can ill afford the expenses attending an operation and detention in a home, and I have heard bitter complaints on this subject. It is, indeed, possible that in a highly neurotic or neurasthenic lad or young man varicocele may give rise to trouble; but I contend that because such a state may exist in an exceptional case it is unnecessary, if not unfair, to subject candidates to the expense and risk of operations as we so frequently do. Not long ago a young officer in the militia who had a large varicocele asked me about competing for the regulars; I advised him not to do so as he would surely be rejected for the varicocele and be put back for operation which I certainly should not advise him to undergo. This young officer subsequently went to Nigeria and did some stiff marching and hard work in that trying climate and has returned after more than a year without a day's sickness or any inconvenience from a very large varicocele.

The proposition I offer is this: if we honestly believe varicocele to be a disqualification for the army let us reject the case at once and let us not commit ourselves to recommending any operation and provisional entry into the army after it *if only it be successful* (see extract of regulation quoted above), for the military authorities have numbers of candidates on the qualified list ready to replace rejections on medical grounds. Why cannot we in the army follow the rule laid down in the Admiralty medical regulations—viz., reject cases of varicocele offhand and have nothing whatever to do with recommending operations and provisional entry thereafter? I am informed that naval surgeons are emphatic and relentless in excluding candidates or recruits the subjects of varicocele in any form—I assume there must be some strong grounds for this. If so, I trust that naval medical officers will take part in any discussion which may follow publication of this letter. We in the army have of late copied the Admiralty in our highest institutions; let us, then, copy their medical system, for presumably the military officer is required to be as efficient as the naval officer. The former certainly serves abroad a great deal and undergoes the same risks of service in all climates.

In conclusion, as I have stated that during my experience I have seen deplorable results of operations recommended, I shall ask the forbearance of your readers while I quote two examples. A B was operated on for varicocele of the left testicle, which atrophied; subsequently varicocele developed in the right. C D, a successful competitor, was rejected for undescended testicles; he was subsequently operated on by an eminent London surgeon. The lad competed a second time[3] after this and was again successful. On being re-examined by the Army Medical Board the scrotum was found to contain two pea-sized bodies on each side supposed to be testicles. We army medical officers must apply the War Office regulations no matter what our private opinions may be.—I am, Sirs, yours faithfully,

FRANK HOWARD, M.D. St. And.,
Colonel, Army Medical Staff (R.P.); Senior Medical Officer, Recruiting London Area.

Sussex Mansions, S.W., Sept. 15th, 1905.

[2] Many medical officers of long service have borne me out in this experience.

THE DEATH OF A CORONER LEAVING AN INQUEST UNFINISHED.

To the Editors of THE LANCET.

SIRS,—In a short article under the heading of "Medicine and the Law" contained in THE LANCET of Sept. 16th you refer to a case of exhumation of a dead person in South Staffordshire which arose through the adjournment of the inquiry and the sudden death of the coroner. As I am the deputy coroner referred to, perhaps you will excuse me if I point out that your writer laboured under some misapprehension of the reason of the exhumation and the requirements of the law. I did *not* consider it necessary that the jury should again view the body, nor did I even suggest the possibility of the law requiring it. I merely conformed to the law in viewing the body myself. The jury having once viewed the law, so far as they were concerned, was satisfied, but a coroner cannot hold an inquiry without viewing and the coroner who had previously viewed was dead. I may add that my own opinion as to the viewing of bodies is that it should be left entirely with the coroner to decide whether the jury should view or not view.

I am, Sirs, yours faithfully,

ALBERT A. BETHAM,
Acting Coroner for Staffs.

Sept. 19th, 1905.

[3] Successful candidates if medically rejected are obliged to compete again.

FAKIRS AND ANÆSTHESIA.—The Medical Council of the Russian Ministry of the Interior has forbidden, says the *Siècle*, that Indian fakirs should hold *séances* for the purpose of inducing hypnotism or anæsthesia.

THE METROPOLITAN ASYLUMS BOARD AND THE TREATMENT OF ITS ASSISTANT MEDICAL OFFICERS.—At a meeting of the Metropolitan Asylums Board held on Sept. 16th, the asylums committee reported that it had received the resignations of three assistant medical officers employed at Darenth Asylum as a protest against the general conditions appertaining to their position and asking that an inquiry should be made into the grounds of their protest. The committee further stated that all the correspondence in connexion with the resignations, together with communications from the officers which had appeared in recent issues of THE LANCET, had been read and considered and it had appointed a special subcommittee of nine members to inquire into the whole of the circumstances which have led to the resignations. The action of the committee was approved and the report was adopted without discussion.

THE ORGANISATION OF THE MEDICAL PROFESSION.

(FROM OUR SPECIAL COMMISSIONER.)

Liége, August, 1905.

CONGRESS OF THE BELGIAN MEDICAL UNIONS.

A SMALL but interesting Congress has been held at Liége during the month of August under the name of the National Congress of Professional Medicine. Practically this meant medical ethics and economics. The editor of *Le Scalpel*, Dr. L. DEJACE, presided. The Government patronised the Congress and was represented by Dr. El. Voituron from the Ministry of Agriculture, which has among its duties superintendence of the sanitary service of Belgium. Though many influential medical men and medical societies supported this Congress it must be confessed that the number of the "adherents" and subscribers who actually attended was not large. The Congress met in the hall of the Academies at the University of Liége and the first question discussed was introduced by Dr. J. P. NUEL, professor of ophthalmology. It dealt with the new Belgian law of Dec. 24th, 1903, by which employers are compelled to provide medical treatment for their workers when accidents occur. Dr. Nuel urged that the injured workers ought to be allowed to select their medical attendant. In France this was permitted. In Germany, for some 12 years, the medical profession had struggled in vain to establish this principle. The last congress where the matter was discussed is said to have been attended by 4000 German medical practitioners and the great majority voted in this sense. But in the Belgian Parliament it was argued that the workman should not choose his medical attendant because his employer would know better whom to select and, because, if the workmen selected their medical attendant, the expense would be much greater. Also it was said that as the employer had to pay he ought to be able to choose which surgeon should be engaged, just as he chose his own engineers and others whom he employed. In reply, it is pointed out that the engineers watch over the employer's property but the medical man is called upon to attend to the health, to the very existence, of the workman. The employer might as well impose a tailor, a baker, a grocer on his workmen on the ground that indirectly he pays them all. Again, it is essential that all patients should be treated by medical attendants in whom they have confidence, and this is most likely to be the case if they themselves choose their medical attendant. It appears, however, that figures were quoted in the French Chamber of Deputies and reproduced before the Belgian Chamber of Representatives which caused much alarm. These related to five insurance companies that covered the employers' liabilities and showed that a fifth, sometimes a fourth, of the total sum allotted for accidents was spent in paying fees to the medical attendants. Instead of considering this a proof of the great services rendered by the profession it was interpreted as signifying that the medical fees paid were very high. As a matter of fact, they only amounted to from 5*d*. to 6*d*. per day per patient, medicine included. Then it must be borne in mind that in France during the first four days, and in Belgium during the first seven days, no payment whatever is made, either to the workman or his medical attendant. It is only when the accident is sufficiently severe to require treatment lasting longer than this period that compensation is given. As slight injuries are of frequent occurrence it has been reckoned in Germany that they represent nearly half the amount of medical attendance given. Other statistics, notably from a benefit society at Mons, all go to show that there is very little danger that the medical men who attend in cases of accidents will be over-paid. On the contrary, they are usually and scandalously under-paid.

At the Liége Congress it was stated that the colliery surgeons in the surrounding coalfields only earned from £80 to £120 a year all told and that on an average they did not receive more than 2*d*. per consultation. In such circumstances the necessity of organisation is very evident. The working classes have so far organised that they have compelled the Government to enact laws in their favour, but while these laws were being discussed the medical profession had no organisation capable of protecting its interests though these were equally at stake. And the matter will not end here. The new law compels the employer to pay compensation and the cost of medical attendance in case of an accident. Such payments are to continue, if necessary, for six months. After that the patient becomes an ordinary or chronic patient and is no longer treated as a case of accident. Though theoretically every Belgian is entitled to gratuitous medical assistance if he has no means of his own this medical service is so badly paid and organised that it is ineffective. Therefore the new law which provides medical treatment and sick allowance in case of accidents will probably be supplemented by another similar law to meet cases of ordinary sickness. If the insurance companies or the employers are also to have the choice of the medical attendant for ordinary cases of illness then what will there be remaining for the independent practitioner? Nearly the whole of the working classes will be withdrawn from the domain of general medical practice. They will all be attended by the salaried servants of the employers or of the insurance companies. In view of such a contingency the Liége Congress insisted that whoever pays, still it shall be the patient himself who must be allowed to select his medical attendant.

In raising this question the Congress at Liége has rendered good service It is a problem that interests not only the Belgian practitioners: in all countries there is a strong tendency in favour of legislative interference in such matters. The great example set by Germany with its compulsory insurance laws is being followed by other nations. Each country will introduce modifications to suit local conditions, but something more or less complete or incomplete is likely to be attempted by nearly all the legislatures of civilised countries. In this the interests of the medical profession are sure to be sacrificed unless the profession is able to organise and to make its voice heard. After hearing Dr. Nuel's report a brief discussion ensued and the Congress eventually unanimously adopted a proposition demanding that the law should be so amended as to enable the victims in cases of accidents to select the practitioner by whom they desire to be attended.

The next question related to the choice of medical experts when a contest arose in the law courts as to the injury done by an accident in a mine, factory, or workshop. At first it was proposed that the Belgian law should be similar to the French law and declare that the medical man attending the patient, whether chosen by the employer or by the patient himself, could not be appointed as expert. Nor should the medical practitioner appointed by the employer to report on the condition and the treatment of the patient be admitted as expert in the matter under judgment. To this rule the Belgian Government had assented and then it altered its mind, leaving the judge free to act as he thought best. But then if the judge calls upon the medical attendant to act as witness the latter exposes himself to be prosecuted for revealing professional secrets. To be safe the medical attendant must obtain a written permission from his patient and if such medical testimony is not favourable to the patient's claims then the latter may refuse to give the authorisation. Evidently the intervention of an impartial outsider is needed; but this may entail extra expense and on all sides the greatest fear was manifested of spending more than can possibly be helped. No motion, however, was submitted on this subject.

Then a nice point was raised which applies to all countries. A workman is injured. His employer must pay the medical attendant; but the injured man may be taken to a hospital where no charge is made. The Congress adopted a proposition to the effect that the medical attendant should, in all cases, be paid, whether he be the house surgeon at a hospital or in private practice. The money is there, it has been provided for by law, and why should it not be paid because it so happened that it was more convenient to carry the injured man to a hospital instead of taking him to his home?

The question of organising medical unions or syndicates was then discussed and it was felt that medical men should avail themselves of all laws facilitating the organi-ation of crafts, trades, and professions. By the Belgian law such unions are given facilities for insurance, within certain limits, on very advantageous terms and with a State guarantee. There is no reason why medical men should not profit by this law; it would be a great boon to the poorer practitioners. The Congress, after hearing a report on the subject read by Dr. LOONTJENS, unanimously adopted the following motion:—

This Congress of Professional Medicine recommends medical clubs or societies to study the law of March 31st, 1898, on professional or trades unions. The medical societies would be well advised if they followed the example of the professional or trades unions and inserted

in their statutes a clause establishing a system of conciliation and arbitration for the settlement of differences or litigation that may arise between members of the profession or with private individuals but that interest the medical profession. This Congress further urges the importance of keeping young medical practitioners well informed of their duties towards their fellow members of the profession:—1. By lessons and lectures on deontology given at the universities. 2. By the distribution of codes of deontology, drawn up by the examining juries and medical committees.

When this motion was carried, Mr. ADOLPHE SMITH was invited by the President to give an account of the organisation of medical unions in England. As Liége is a great mining centre, Mr. Smith insisted especially on the success of the Northumberland and Durham medical unions in raising the payment made to the colliery surgeons from 6*d.* to 9*d.* per fortnight. The PRESIDENT expressed the gratification with which the Congress heard of the good progress achieved by its medical brothers of Great Britain and a very cordial vote of thanks was given to Mr. Aldolphe Smith for his encouraging communication.

On the second day a report was read, and a discussion followed, on the purely local difficulty which exists on the Belgian frontier. It sometimes happens that the nearest practitioner lives on the other side of the frontier and thus French and Belgian medical men are constantly crossing the frontier and interfering with each other's practice. This has led to many diplomatic communications, conventions, and complications, and yet none of the parties concerned seem satisfied. Now a new factor is coming on the scene. The Congress resolved that the Belgian medical unions should appeal directly to the French medical unions and that they should jointly endeavour to find a solution of the difficulty and invite their respective Governments to act accordingly.

The question of the inspection of schools was next introduced but not without protest, for it was considered a special matter, not directly concerning professional medical interests. Nevertheless, on the proposal of the PRESIDENT the following motion was adopted:—

That the medical inspection of schools and school children being a public service interesting the community at large, the Congress expresses the desire that this service shall be organised throughout all the schools of the country and confided exclusively to medical men paid from subsidies given by the State, the provincial, or the communal authorities.

This resolution is important, for its application would mean that in all matters relating to the health of the children the secular sanitary authorities would control the clerical schools.

The next important matter discussed was what in England would be described as the medical treatment of paupers. There are in Belgium no workhouses and no Poor-law system but each commune is supposed to appoint and pay a poor man's medical attendant, who must attend those who cannot afford to pay a private practitioner. How this is done was shown by figures given by Dr. Deneffe concerning 264 communes of Eastern Flanders. Of these, 21 only paid their medical officer for the poor £2 per annum, 22 communes paid £3, and 33 paid from £3 to £4. Then 66 communes paid from £4 to £8. More than half the communes paid from £2 to £8. There were 47 communes giving from £8 to £10. 35 from £12 to £16. 25 from £16 to £20, six from £20 to £24, and 10 from £24 to £28. One commune paid £30, one £34, and one £36. Where, however, the larger sums are given the work is sometimes divided between two practitioners. For such inadequate remuneration the poor man's medical attendant must attend lying-in cases, provide bandages, antiseptics, and, indeed, if he does his work fully it will cost him as much as, or more than, he receives. Insufficient as is this payment a public inquiry made in 1895 revealed the fact that in the surrounding districts of Brussels, Charleroi, Huy, and Liége out of 345 communes only 85 had appointed a medical officer for the poor. As for payment in proportion to the population, there is no rule. Thus at Angleur it was £4 per annum per 1000 inhabitants; at Awirs, £2 per 1000; at Flémelle-Grande, £4 per 5000 inhabitants; at Vevegins, £3 for 1700; and at Theux £4 are divided between two medical practitioners, and the population is set down at 5000 souls. After hearing these and many other details the Congress adopted a proposition stating that the organisation of the service for giving medical assistance free of charge to the indigent was a matter of urgent necessity. The poor should, the propo-ition went on to say, be free to select the medical attendant they preferred. The latter would be paid by the local authorities according to a tariff to be prepared and drawn up by the Academy of Medicine, the Superior Council of Hygiene, the medical commissions of the various provinces, and the Federation of the Medical Unions of Belgium.

A few other matters of minor importance were discussed and the labours of the Congress concluded.

MEETING OF THE BELGIAN MEDICAL PRESS ASSOCIATION.

Those members of the Congress who were medical journalists remained and a meeting of the Belgian Medical Press Association was held. The Executive Committee or Bureau was re-elected and consists of Dr. Dejace, president; Dr. de Busscher, vice-president; and Dr. Pêchère, secretary. The latter gentleman, it will be remembered, is treasurer of the International Medical Press Association. Then there was some discussion concerning the forthcoming International Congress of Medicine at Lisbon and the organisation of a service of information for the medical press. Finally a resolution was passed blaming the promoters of some of the scientific congresses recently held at Liége, who, while very pleased to have notices inserted in the press, had given themselves but little trouble on behalf of the representatives of the medical journals. The resolution goes on to state that the members of the Belgian Medical Press Association will no longer publish notices concerning congresses unless the organisers of those congresses send, with such announcement, a press card and undertake to give the representatives of the medical journals all the facilities necessary for the accomplishment of their work. Finally a banquet united together those who are enaged in the useful work of organising the medical profession and the medical press. It is anticipated that such meetings will take place every year and thus the medical unions of Belgium may continue to gather strength.

BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

The Warley Woods: a Lung for Birmingham.

In previous letters I have referred to the strong agitation which is being carried on by a number of Birmingham gentlemen, notably by Mr. A. M. Chance, to procure Warley Woods as a public park for Birmingham and district. The agitation began some months ago when it was learned that the woods were to be sold for building sites and that the felling of the timber had already commenced. Mr. Chance at once interested himself in the question and on his initiative a subscription list was opened with the view of raising the necessary sum for the purchase of the woods and if possible for an extension of the adjoining Lightwoods Park, in all an area of 27 acres. For these two objects the sum required was £13,000; this has now been obtained. But having gone so far and having been encouraged by the ready response to the appeal, the committee which has had the business in hand is of opinion that it should go still farther and acquire the whole of the Warley Abbey estate which would give to Birmingham a beautiful woodland park of 100 acres. For this a further £33,000 are asked and already donations of £3000 and £500 have been promised. A subscription list has been opened by the *Birmingham Daily Mail* and more than £200 are already announced. So far the Birmingham, Smethwick, and Oldbury councils have made no contributions, although many, including the Right Hon. Mr. J. Chamberlain, M.P., advocate their doing so. The feeling which the councils seem to share is that the provision of such a park is a luxury rather than a necessity and that they in consequence cannot call upon the ratepayers to contribute collectively.

Local Sewerage Schemes.

For some time past the methods of dealing with the sewage at Oldbury have been considered very unsatisfactory and finally the Staffordshire county council has taken proceedings against the authorities. Prior to this, however, the local council sought the advice of Professor Frankland and Mr. H. Silvester, who have conducted a series of experiments extending over a period of two years and who recommend reconstruction of the works. They are of opinion that the best means of dealing with the sewage is the contact-bed system, requiring ten acres of contact beds, and the sewage to be treated three times. It is, however, pointed out that if they had not to deal with the refuse from certain neighbouring alkali works five acres of beds would suffice and

there would be no necessity to pump the sewage; a saving would in that case be effected of £600 per annum. A good deal of the plant at present in use at the sewage farm, including filter materials and beds, will have to be sacrificed under the scheme, the whole cost of which is estimated at £19,000. The council will be recommended at its next meeting to adopt the scheme and the fact that for some months past an effluent has been obtained by the method suggested capable of sustaining fish will no doubt have its proper weight.—Difficulty has arisen at Worcester in connexion with the payment for the outfall sewers and the tunnel beneath the river, owing to the original estimate having been exceeded by more than £4000, despite the fact that the tunnel and the two sets of iron pipes had been reduced, the former from 8 feet 6 inches to 6 feet 6 inches and the iron pipes from 2 feet 6 inches to 1 foot 8 inches, a change which, it was thought, would effect a saving of at least £1200. The amount in dispute has been referred to arbitration.

The Small-pox Epidemic at Nuneaton.

The cases of small-pox at Nuneaton now number over 60. It was hoped that the epidemic would be confined to one part of the town but unfortunately cases of the disease have made their appearance in several directions. A large proportion of the patients are unvaccinated children.

Local Guardians and the Tramp Question.

At the last meeting of the Birmingham board of guardians a letter was read from the clerk to the King's Norton board of guardians suggesting that a conference should be held by the Birmingham, King's Norton, and Aston boards to consider the tramp question and discuss the advisability of the continuance of three separate tramp wards for the city and its immediate surroundings. It has been pointed out that it is not the feeding of the tramps which is the important expense, for the cost of bread and cheese is 2½*d.* per head, and if gruel is also given it only costs another 1*d.* each. The chief cost is in providing sleeping accommodation and in keeping the casual wards clean. It is expected that five representatives will be appointed by each of the three boards to confer as to the advantages (if any) which have resulted by combined action on the part of neighbouring unions in other large centres of population. From the financial statement of the Birmingham board of guardians for the year ended Lady-day last I learn that the daily average of workhouse inmates during the year was 1651, the highest number that has been maintained since the completion of the infirmary. The average number of inmates in the infirmary was 1040, as against 1088 in 1904. The expenditure on vaccination during the year was £1903, being £205 less than the previous year. The lunatics chargeable to the parish cost £25,160. In the discussion on the statement it was stated that the workhouse numbers had increased 36 per cent. and the expenditure less than 35 per cent. during the last seven years. The Aston board of guardians has practically decided to purchase Whitton Hall as a home for "ins and outs" children. The building will cost £2650 and it is expected to provide accommodation for 80 children. The Birmingham board of guardians have decided to seek an expert opinion as to the marketable value of the proposed site at Summer Hill for a home for "ins and outs."

A Milk Problem at Wolverhampton.

A case of considerable interest to farmers and dairymen was brought before the stipendiary magistrate of Wolverhampton a short time ago. A dairyfarmer was charged with selling milk from which 20 per cent. of the original fat had been abstracted. It appeared, however, from the evidence that samples of milk taken directly from the cow and examined at once showed the same deficiency of fat, so that there was no question of improper treatment of the milk. It was further shown that the afternoon and evening milk was considerably richer in fat than was the morning milk, the cows being milked three times a day. The case was, of course, dismissed.

Handsworth Health Report.

The medical officer of health of Handsworth has just presented his annual report. The births registered during the year were 1436; of these, 755 were males and 681 were females. The birth-rate was 23·4 per 1000. The death-rate was 12·2 per 1000. The infantile death-rate was 133 per 1000. The epidemic death-rate was 1·3 per 1000. Interesting figures are included in the report showing the rapidity with which the district has grown. In 1871 the population was 14,947; in 1904 it was 61,500; and it is now numbered by the Registrar-General as one of the 76 great towns.

Scarlet Fever in Birmingham.

Mr. Alderman Cook, presiding at a lecture lately delivered on the subject of scarlet fever, gave some interesting information concerning the disease in Birmingham. During the last 15 years the number of cases and deaths has been as follows:—

—	Cases.	Deaths.	—	Cases.	Deaths.
1890	2995	209	1898	1320	47
1891	1466	91	1899	1255	29
1892	1418	68	1900	2063	93
1893	1614	68	1901	3314	156
1894	1738	75	1902	5044	293
1895	2964	133	1903	2635	144
1896	3389	154	1904	1659	65
1897	1929	95			

The total number of cases was 35,053 and the total number of deaths was 1720, the percentage of deaths to cases being 4·9. As shown by the figures quoted, there had been a great increase of cases every sixth year—viz., in 1890, 1896, and 1902. Although scarlet fever caused so large a number of cases the deaths were not nearly so numerous as from most of the other zymotic diseases. During the past ten years the average number of deaths from those diseases had been as follows: small-pox, 3; measles, 226; scarlet fever, 121; whooping-cough, 256; diphtheria, 149; typhoid fever, 100; and diarrhœa, 698. The poorest wards in the city were not the districts where scarlet fever was most prevalent. The children in the slum seemed to enjoy an immunity from the disease which the better-kept children in the other districts did not, but while the slum children appeared to be less susceptible they were at the same time liable to take it in a more virulent form than were the others. 87 per cent. of the cases occurring in Birmingham have been treated in the isolation hospital.

Sept. 19th.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

"Beautiful Oldham."

IN what may be called prehistoric times, before Oldham existed (speaking Hibernically), it may have been, and probably was, beautiful, but since man built tall chimneys, used steam engines, and burnt smoky coal lavishly the phrase "beautiful Oldham" has been supposed to be ironical or contemptuously satirical. But even in Oldham there is a craving after beauty and a society has been in existence for the last three years and was mentioned in these columns a year or two ago the object of which is to make the ugliness of a manufacturing town less ugly. Those who have ever been at an Oldham railway station will remember the black unloveliness around them, but at one of them they may now see "the walls and pillars brightened by little wicker baskets filled with vivid green." This has been done by the voluntary efforts of the porters. One "court" in a slum of which the chief feature was an old midden, decorated with derelict pots and pans, is now a small green garden. Shrubs have blossomed in it and are tended by the boys and girls of the court who have by the influence of the society become so far civilised as to work with a will and to watch with delight the growth of the young plants from seeds of their own sowing and to fight for their protection. This invasion of beautiful things into the realms of ugliness roused the envy and the anger of neighbouring courts, and it was only after "fierce battles" that the lovers of beauty were left to enjoy their handiwork in peace. These are illustrations of the good that is gradually being done. Among the objects of the society are the preservation of existing features which add to the attractiveness of the town; the utilisation of waste places for tree-planting, &c.; the cultivation of shrubs and flowers in the spaces adjoining public buildings, schools, and mills; the cultivation of the love of nature and gardening in school

children; and an important one is to urge that the new architecture of the town shall be varied and picturesque. The programme is large, but the society does not attempt too much at once and at the third annual meeting, held at Werneth Park on the 16th, the report of progress was encouraging. Inquiries as to the formation of similar societies come from many parts of the country. It is said that already there is a "beautiful Warrington," though the passer-by would scarcely be aware of it, for the town is blackened by the filthy outpouring of many chimneys; and a "beautiful Birmingham" is talked of. Glasgow, Newcastle-on-Tyne, Bolton, Carlisle, Bristol, and other towns have already made inquiries. Of course the chief enemy to the progress of beauty and cleanliness is black smoke against which a crusade is being carried on. At the meeting Mr. J. W. Graham of Dalton Hall, Manchester, spoke instructively on its prevention and insisted that the pollution of the air was unnecessary and remediable. He said that it was mainly due to the conservatism of the manufacturers that prevented the use of the various types of economical and satisfactory smoke-consuming apparatus. He suggested that the inspection of smoke should be placed under a central Government department. The tendency of these efforts in such places as Oldham must certainly be for good, both directly and indirectly. They are civilising and health-giving, and deserve all encouragement.

Medical Men and Drink.

The quarterly conference of the Manchester, Salford, and District Temperance Union was held on Sept. 16th at Hayfield. Dr. J. D'Ewart gave an address on the medical aspect of the drink question, in which he defended the medical profession against the charge "that it was not moving in the temperance line, or that it was not moving rapidly enough." He is reported to have made one remarkable statement: "Formerly in some instances a patient was dosed with a pint or even a pint and a half of whisky a day at the Manchester Infirmary; now, not a pint a week was used for all the patients." One would like to have some details of the evidence on which, it must be supposed, this statement is founded, and the history of specific cases in which one and a half pints of whisky were given to a patient in 24 hours. If Dr. D'Ewart has been misrepresented the error had better be corrected.

The Fight against Consumption.

There is happily increased and increasing attention given not only to the treatment but, perhaps in a lesser degree, to the prevention of consumption. The Bolton corporation has decided to make inquiries from Mr. W. J. Crossley with a view to acquire a site at Delamere for Bolton consumptives. Mr. Crossley, it will be remembered, founded the Crossley Sanatorium at Delamere, which is connected with the Manchester and Bowdon Consumption Hospital. Delamere has already two sanatoriums on a large scale, Liverpool having found a site there for this purpose before Manchester. A question suggests itself as to the advisability of so many consumptive hospitals being brought into the same neighbourhood, while there is no question as to the objections from the point of view of the inhabitants. But apart from sentiment, it would seem better to avoid multiplying concentration camps in a limited area. Derbyshire is moving in the matter and there was a meeting held at Derby yesterday of public health authorities in connexion with the proposed provision of a county sanatorium for consumptives. The scheme is to have an institution with 40 beds which, with 20 acres of land, would cost about £10,000. The Duke of Devonshire is to preside over a meeting in December to initiate the undertaking. The county council proposes to contribute £2500 to the building fund and £400 annually for the maintenance of ten beds. Durham is not new to the fight and on the occasion of the annual visit of the governors of the Society for the Prevention and Cure of Consumption in the county of Durham to the sanatorium at Stanhope Dr. W. Robinson of Sunderland made an encouraging statement and an anticipation which we must hope is not too sanguine. He said that if the disease continued to diminish at the same rate in the future as in the past he trusted that at the end of 80 years there would be no consumptives to treat. In the county of Durham alone the death-rate from consumption had decreased during the last 11 years more than 30 per cent. owing to the spread of the principles which the society taught. "The main agents in preventing the disease were ventilation, abundance of sunlight, both in the house and in the workshop." Two of the great difficulties are to get people to come in the early stages of the disease and that of finding suitable occupation for patients on leaving the institution, as they should work in the open air. One point about this sanatorium is that it is practically self-supporting. The subscription of 3*d*. per quarter by each man of various bodies of workmen assists in the maintenance. Lord Barnard, the president of the society, said that the working men of the county of Durham deserved admiration for the way in which they supported institutions of that kind. He added also that he believed in the open window and in sunlight, which some people seemed to be afraid of.

Salford Health Report.

Mr. C. H. Tattersall, medical officer of health of Salford, has just presented his report on the health of the town in 1904. Several interesting facts come out. In the four districts of Salford the birth-rate averages 31·7 per 1000, varying from 34·6 in the Regent-road district, 33·3 in Greengate, 32·9 in Pendleton to 25·3 in Broughton, falling gradually, according to the increase in the residential amenities of the neighbourhood. The Salford birth-rate is therefore higher than that of the 76 large towns, which is 29·1 per 1000, and also that for England and Wales—27·9. But as the birth-rate is highest in certain districts so in the same districts are the highest death-rates to be found, though they are slightly lower than in the preceding year. Greengate and Regent-road show a death-rate above the average for the borough, which is 21 per 1000, while Pendleton and Broughton are below it. Greengate has the high death-rate of 28·3 per 1000, while in Broughton it is 14·7. Still there is some improvement all round. The infantile mortality, however, is an exception, having risen from 168 per 1000 births the previous year to 193 last, zymotic disease being the chief cause of death.

Sept. 19th.

WALES AND WESTERN COUNTIES NOTES.

(FROM OUR OWN CORRESPONDENTS.)

Cardiff Infirmary.

DURING the past 24 years the expenditure of the Cardiff Infirmary has exceeded the income in 15 years. In 1903 there was a balance of £371 on the right side but this favourable result had not occurred previously since 1893. In 1904 the adverse balance was £1654, though it is only right to say that the average number of patients in the infirmary day by day during the year was 156, a number very considerably above the average of the preceding ten years, when it was 122. The number of out-patients treated was 19,525, compared with a yearly average in the previous ten years of 13,567. This very serious increase in the number of out-patients was discussed at the meeting of the board of management held on Sept. 13th, when Mr. T. Garrett Horder proposed that a special committee should be appointed to investigate the circumstances of persons attending the out-patient department. He said that many of the patients had trivial complaints and that the great increase in the number was not only a burden on the infirmary funds but prevented the staff from giving the necessary attention to serious cases. Mr. Cornelius A. Griffiths expressed the opinion that a large number of out-patients took advantage of the department who ought not to do so; and Mr. H. C. Ensor said that people would subscribe more freely if they knew that only deserving persons were treated as patients. When an informal investigation was made a few years ago it was found that about 12 per cent. of the patients interviewed were not fit and proper persons for charitable aid. Although there was a general agreement with Mr. Garrett Horder's motion it was finally decided by the board to appoint a committee to investigate the work of the out-patient department, with special reference to its abuse by undeserving patients, and to report upon the best means of economising the administration of the department without impairing its efficiency. In connexion with this question it is of interest to inquire whether the number of out-patients has increased in the same ratio as the population of the town. In 1884 the percentage of out-patients to the Cardiff population was 7·9; in 1894 it was 7·5. From this year until 1901 it remained at about 8 per cent. In 1902 it was 9·5, in 1903 it was 10·6, and in 1904 it was as high as 11 per cent. It is not

a little suggestive that this sudden increase in the popularity of the out-patient department was coincident with increased contributions from workpeople who in 1900 contributed to the infirmary funds £1465 and in the four subsequent years £2319, £3540, £3641, and £3776 respectively. If the proportion of out-patients to population had been in 1904 only 8 per cent., as it was in the earlier years, instead of nearly 20,000 persons being treated there would have been a little more than 14,000. The question may be asked, therefore, whether this additional 5000 or 6000 may not be due to the fact that the workpeople consider they have a right to obtain some return for their contributions, and thus the resources of the institution are unduly taxed.

Conference of Milk Sellers.

Those public health officers who administer the Dairies, Cowsheds, and Milkshops Orders could not have spoken more strongly of the necessity for keeping cowsheds and dairies in a thoroughly cleanly condition than did some of the speakers at the annual conference of the Federation of Dairymen and Cowkeepers' Associations held at Cardiff on Sept. 12th. The members of the conference passed a resolution expressing the opinion that the responsibility for carrying out the Orders should devolve upon county councils rather than as at present is the case upon district councils and that no milk should be sold from a farm or cowshed until a certificate had been obtained that the premises were in a sanitary condition and the cows healthy. The prevailing opinion seemed to be that the cowsheds in this country were already kept in a satisfactory state, though this is contrary to the experience of many public health officers. In the last report in which he dealt with the subject at any length the medical officer of health of Glamorgan (Dr. W. Williams) said that the inspection of such premises was supervised in a very lax manner in most districts of the administrative county and he suggested that local authorities might with advantage give the question much more attention than they do.

Winsley Sanatorium and Friendly Societies.

It is to be regretted that Dr. H. J. Mackay has not succeeded in persuading the members of the friendly societies in Devizes to maintain a bed at the Winsley Sanatorium for Consumptives. He proposed to obtain the capital sum of £250 needed from the general public and that the 1300 members of the societies who were between the ages of 16 and 65 years should each contribute 1*s.* yearly, realising the £65 required for maintenance. The Worcestershire friendly societies have been generous supporters of the sanatorium on the Ankerdine Hills and several members have received treatment in this institution to their own advantage as well as to that of the societies.

Taunton Isolation Hospital.

At the meeting of the Taunton town council held on Sept. 12th the question of the management of the isolation hospital, which was jointly established by the Taunton town council and the Taunton rural district council, was again discussed. Allusion has been made to the subject in previous numbers of THE LANCET. It will be remembered that the members who represented the town council on the committee of management, together with the medical superintendent (Dr. H. J. Alford), resigned some time ago and the rural district council's portion of the committee appointed another medical man as temporary medical officer. This gentleman has now resigned and the rural council has advertised for a permanent medical superintendent. A joint application had been made to the Local Government Board that that department should hold an official inquiry into the management of the institution, but at this meeting it was reported that the Board declined to do so. After a long discussion it was eventually decided that a special meeting of the town council should be held to consider the whole matter.

Infectious Diseases in Cornwall.

The monthly report of the sanitary committee of the Cornwall county council states that during August there were 45 deaths from zymotic diseases, equal to a zymotic death-rate of 1·6 per 1000 per annum, against 21 and 0·8 respectively during the previous month and 21 and 0·7 respectively for August, 1904. Of the zymotic deaths, one was due to scarlet fever, three to measles, three to whooping-cough, and 38 to diarrhœa (against 13 during the previous month). Two cases of unusual diseases were reported from Helston urban district—one of anthrax in a gipsy woman and the other of typhus fever. The anthrax case recovered but the typhus case ended fatally. The latter case was not notified: the first intimation the medical officer of health had of it was when he received the death certificate signed by a female as an M.D. Boston. The non-notification of the case was a grave disregard of the law and the Helston town council have therefore wisely decided to prosecute. All possible precautions have been taken and there has been no spread.

Sept. 18th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Epidemic of Enteric Fever in Limerick.

AT a meeting of the public health committee of the corporation of Limerick on Sept. 14th a communication was received from Mr. Macgrath, the superintendent medical officer of health, stating that since his last report 13 fresh cases of enteric fever had occurred in the city. It was decided to have samples of milk submitted for analysis and the sanitary officers were given plenary powers to prosecute where offences under the Public Health Act were reported.

Typhus Fever in Innishowen.

The outbreak of typhus fever in the parish of Clonmarry, in the centre of Innishowen, co. Donegal, has resulted in the death of a fever hospital nurse, Miss M. A. McGinnis, a niece of Dr. G. Sigerson of Dublin, two wardswomen, and two patients. All the patients except two have survived, while practically the ordinary staff of the fever hospital, Carndonagh, contracted the disease and never recovered. The people of the entire rural district are so terrified that it was with extreme difficulty that assistance could be obtained to carry out the interments. A man who dug a grave for the burial of a patient who died from the disease was stoned when he reached home. £1 was charged for the use of a horse, £1 for a cart, and 10*s.* for the use of a horse and car to convey a coffin from the maker's. It is thought that infection came through some old clothes imported into the district.

Buncrana Water-supply.

At the monthly meeting of the Innishowen rural council held on Sept. 9th letters were received which had been sent to the Local Government Board from Mr. M. C. Hime, LL.D., and Dr. W. Bernard, complaining of the inadequate water-supply, and urging that the new sewers should not be used until there was an absolute certainty that the water by being largely increased would amply suffice to flush them. The matter was referred to a local committee which is taking steps to obtain better storage.

Death in Child-birth.

At an inquest held recently in Belfast some allegations having been made against a medical man and midwife for not attending a woman who died in childbirth the coroner wisely adjourned the case until Sept. 13th to allow of further evidence being produced. It appeared that a poor woman, advanced in pregnancy, consulted a medical man as she was suffering from a weak heart and kidney disease; he advised her to go to a hospital and finally, after further consideration, she agreed to do so. On the morning, however, that she was to have gone to the hospital, when this medical man went to the house the woman was dead, death, in his opinion, having been due to shock following premature labour, accelerated by inflammation of the kidneys and heart disease. It appeared from the evidence of the husband that when the woman was taken in labour he went for an unqualified nurse—a handy woman—who came and attended. Two children were born alive between 2 A.M. and 3 A.M. and when the handy woman came she sent the husband at once for the medical man originally consulted by the patient. He was out and three other medical men refused to attend, as a medical man was supposed to be in charge. Then a dispensary medical officer was asked to attend and he told the husband of the woman that he was not in the habit of taking cases of that nature unless in connexion with the dispensary, and added that there was a nurse for that purpose, but she said that she could not attend without a note from the relieving officer. Finally, the original medical man consulted, having come back to his home and having then received the message, went to see the poor woman but found that she had died a few hours previously. The jury returned

a verdict according to the medical evidence, adding a rider that the explanations given by the dispensary medical officer and nurse were considered satisfactory. They recommended that notices should be posted, and kept posted, in the poor districts showing where relieving orders could be had and also recommended that medical men should be empowered to issue such orders in urgent midwifery cases to the district nurse.

Water Famine in Donegal Asylum.

At a meeting of the management committee of this asylum, held on Sept. 13th, attention was drawn to the great scarcity of water in that institution. On August 21st for the first time for eight weeks patients were able to be bathed. It was decided to confer with a deputation of the urban council with the view of appointing an engineer to go into the question of obtaining a supply for the town and institution from Lough Salt.

Apothecaries' Hall of Ireland.

Sir Charles A. Cameron has been elected examiner in hygiene, Professor Walter N. Hartley, F.R.S., examiner in chemistry, and Dr. J. C. M'Walter examiner in pharmacy.

Irish Medical Association.

At a meeting of the County Armagh branch of the Irish Medical Association, held on Sept. 13th, in the café, Portadown, Dr. C. C. Deane, president of the branch, in the chair, the following resolutions were passed unanimously in regard to the question of reorganisation of the Irish Medical Association. Moved by Dr. J. S. Darling and seconded by Dr. George Dougan:—

That no scheme of reorganisation can be considered satisfactory which does not provide for the abolition of the committee of council as at present constituted.

That the council should be the executive of the Association and be empowered to administer its affairs, subject to the resolutions of the general meetings and the articles of association.

That in order to make the council an effective instrument in the administration of the affairs of the Association it should be composed of men elected by the general body of the members, who would thus reflect and carry out the policy laid down by, and the instructions of, the general meetings.

That, with a view to efficiency and economy, the council should not consist of more than 21 members; and, in order to induce those who reside at a distance and would be willing to act, the travelling expenses of all members of council who reside outside the county of Dublin should be defrayed out of the funds of the Association.

That, in order to secure continuity in the conduct of affairs of the Association, the members of council should hold office for two or three years, a certain definite proportion retiring each year.

Moved by Mr. J. G. Allen and seconded by Mr. T. H. Brownrigg:—

That the Association should have a permanent office in Dublin and a paid secretary who would daily attend in the same and, in addition to his secretarial duties, be competent to discharge those of editor and compiler of the "Journal."

Moved by Mr. J. L. Rowlett and seconded by Dr. W. Frier:—

That each branch should appoint two or more delegates in proportion to the number of its members who would attend the general meetings and represent the views of their branch thereat, and that the council should have power to summon a meeting of all the delegates or of the delegates of one or more provinces to deliberate on any matter of importance that may arise in the administration of the affairs of the Association. The delegates from each province could thus be formed into a provincial council who could be relied on to advise the council on any particular matter affecting any particular province.

That special efforts should be made to organise the branches and to put them on a satisfactory footing, so that they can be relied on to assist the council in promoting the aims and objects of the Association.

Some other important matters having been discussed the meeting separated.

Dun'op Memorial Home.

On Sept. 14th a home erected in connexion with the Holywood Nursing Society to perpetuate the memory of the late Dr. Alex. Dunlop, J.P., was opened in the presence of a large gathering of friends. Dr. Dunlop spent between 40 and 50 years in active practice in Holywood, near Belfast, and on his death three years ago the scheme was started and in a comparatively short time the promoters were in a position to build and not only has the structure been paid for but a sum of £350 has been contributed to the endowment fund.

Magee College, Londonderry.

Mr. B. McCrea has given, it is announced, £7000 to Magee College, Londonderry, for the foundation of a chair of Physics and for scholarships provided a sum is raised to build a new physical laboratory, and to this fund three gentlemen have contributed £800.

Sept. 19th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Senile Tuberculosis.

M. Bolnet in an interesting paper combats the idea which is so very widely spread that patients over 45 or 50 years of age are very rarely tuberculous. He argues that aged persons who are generally considered to be suffering from simple catarrh and in whose case no care is taken as regards the expectoration are very often in reality tuberculous. The sputum of such persons is full of bacilli and can propagate tuberculosis all the more readily inasmuch as the danger of contamination from such sputum is not suspected either by their immediate relatives nor very often by the medical man in charge. In many cases senile tuberculosis is latent (*torpide*) and is masked by emphysema, pulmonary sclerosis or bronchial catarrh. It is further marked by periods of quietude (*trêves*) of varying duration. The stethoscopic signs are very slight and so are the general symptoms. Senile tuberculosis consists mainly in a fibrous phthisis characterised by broncho-pulmonary sclerosis, by caseous or calcified concretions, and by cavities which are nearly dry or even cicatrised in part. Very often these cases of pulmonary senile tuberculosis are nothing more than a fresh awakening of tuberculosis which had originally occurred in adolescence. They can, however, undergo a certain increase even at an advanced age and sometimes end in becoming an acute phthisis. A great number of such patients leave hospital very much improved in health and on returning to their families continue to propagate the germs of their disease. The danger of the bacilli-bearing sputa of patients suffering from senile tuberculosis is increased by the difficulties of differential diagnosis of this affection, which is liable to be confounded with chronic broncho-catarrh, bronchiectasis, emphysema, and pulmonary sclerosis, either simple or accompanied by cardiac dilatation. The differential diagnosis may also lie between cancer of the lung and bronchial manifestations due to renal insufficiency. The medical man should also not forget that certain acute forms of senile tuberculosis and in certain cases acute phthisis of old people can mimic very closely the clinical picture of typhoid fever, of acute pleurisy, or of acute pneumonia. In doubtful cases the finding of Koch's bacilli will clear up the diagnosis and will insure that prophylaxis being taken which too often is omitted.

The Responsibility of Children for Medical Fees for the Treatment of their Parents.

The court of Nantes has just given judgment upon an instructive case. It was that of a lady who while staying in Paris met with an accident. She was taken home and one of her daughters sent for a medical man, who diagnosed a fracture of the forearm and a dislocation of the shoulder-joint. Not being able to treat the case alone he called in a surgical colleague. Both medical men applied a provisional apparatus and on the next day put the arm up in plaster. On the third day they examined the patient with the x rays. The two medical men sent in a bill for 400 francs and as this was not paid they brought before the courts the patient, the daughter, and the daughter's husband. The court took the view that when the person who calls in a medical man does so for the care of his or her father or mother and the patient is unable to pay, the obligation of paying the medical man is to be ranked among those expenses which are considered as alimony (*ayant le caractère alimentaire*). The daughter was thus adjudged to be responsible for the payment of the fees. The patient and her daughter as well as her son-in-law were adjudged liable to pay the medical men their fee, but the fee was reduced from 400 to 200 francs.

Sept. 19th.

VIENNA.

(FROM OUR OWN CORRESPONDENT.)

The Opening of the Medical Session.

THE new term of the medical schools in Austria will begin on Monday, Oct. 2nd. As a rule it lasts until the Easter holidays—namely, for six months—with short interruptions at Christmas and New Year. The lectures and clinical work

will begin at the same time. The programme for Vienna is as follows. Three clinical teachers, professors of medicine (Professor Neusser, Professor Schrötter, and the temporary director of the clinic of the late Dr. Nothnagel) will lecture on internal diseases; two professors (Professor Hochenegg and Professor von Eiselsberg) will lecture on surgery; two professors (Professor Schauta and Professor Chrobak) will lecture on gynæcology and obstetrics; and two ophthalmologists (Dr. Fuchs and Dr. Schnabel) will lecture on ophthalmology. Lectures on dermatology will be delivered by Dr. Finger and Dr. Richl. Besides these there will be lectures by Professor Politzer on otology, by Professor Chiari on laryngology, and by Professor Weichselbaum on morbid anatomy. These lectures are open to students on payment of very small fees, the maximum amount being £1 each for the full term. Foreign holders of diplomas pay a maximum fee of £2 2*s.* for each course of lectures. Apart from these annually recurring lectures a number of courses, post-graduate lectures, and special preparatory courses, lasting from four to eight weeks, will be conducted by various well-known "privat docenten" and assistants. The subjects will include special branches of surgery, diagnostic hæmatology, bacteriology, serum therapeutics, errors of ophthalmic refraction, forensic medicine, practical obstetrics, rhinological operations, &c. The fees vary from £2 2*s.* to £5 5*s.* and entitle the students to continue working at the respective institutes even after the course is finished. Most of these lectures are in German but a few, such as certain dermatological, otological, and urological demonstrations, will be delivered in English, if required, without extra charge. A considerable number of American practitioners have already notified their intention of joining these classes on account of the last-mentioned advantage.

A New Treatment of Appendicitis.

Dr. Moosbrugger, a country practitioner, has had the opportunity of trying the effects of argentum colloidale (Credé) in a large number of cases of acute inflammation of the appendix vermiformis and has described his results in a paper read before the Clinical Society of Vienna. He said that this preparation had been tried in appendicitis. He gave it by the mouth in small doses of from five to eight grains several times daily, the ointment which is well known under the name of Credé's ointment being at the same time applied externally. The results were so good that Dr. Moosbrugger spoke of the treatment as a specific against appendicitis. In country places where the surgeons were not always able to operate under favourable conditions or when there was a difference of opinion as to whether medical or surgical treatment ought to be adopted, the use of colloidal silver was, he thought, the best means of arresting the disease. In the discussion the view that colloidal silver was a specific against appendicitis was severely criticised, but the method will be given a fair trial in many hospitals. The remedy was said to act by oxidising the toxins and thus rendering them innocuous. It was absolutely harmless to animal life in the small doses given. Dr. Moosbrugger himself took four times the quantity prescribed without any bad effect.

Female Medical Officers in Hospitals.

The medical senate of the University of Cracow has decided to admit females holding the diploma of M.D. to the post of assistant medical officers in the hospital. Public medical appointments have hitherto been open to females only in Vienna. The action of the Polish university will no doubt be followed by other sister faculties.

Etiology of Volvulus.

In a paper on Volvulus read by Dr. Luksch at a recent meeting in Bukowina, he said that the most usual causes of this condition were: (1) cicatrisation of the mesentery of the lower ileum from an as yet unknown cause; and (2) abnormal length of the intestinal canal. The cicatrices might result from small ruptures of the mesentery or from perivascular inflammations of the lymphoid vessels. The abnormal length of the bowel was due, he said, to the diet of the country people who lived mostly on vegetable food. He had often at necropsies encountered intestines having a length of 12 metres (40 feet) and upwards in persons not more than 5 feet 3 inches in height and 32 inches in girth. In such circumstances it was easy to understand why volvulus appeared so often in the population of that district. He also showed a number of specimens with cicatrisation and the intestinal canal of a woman, aged 48 years, measuring 12½ metres (41 feet) when extended. He said that in operating for volvulus a choice between several methods was possible. The affected part of the ileum might either be fixed to the abdominal wall or might be resected entirely, or an entero-anastomosis might be made between the ileum and cæcum or ascending colon, thus preventing a relapse of volvulus. Most cases of this kind appeared in the lowest part of the ileum.

Rhinoscleroma and its Treatment.

At a recent meeting of the Society for Internal Medicine in Vienna Dr. H. von Schrötter exhibited several maps showing the countries of Central Europe where rhinoscleroma prevailed. One focus of infection was situated in the Polish provinces, with branches going off to Prussia and Moravia, and another was in the Russian frontier districts. Up to the present time about 700 cases had been recorded. The disease was infectious and consisted in a growth of granulating tissues in the larger respiratory canals (nose, pharynx, larynx, and trachea, down to the bronchi of the second order). It had no tendency to ulcerate, but it generally cicatrised and might obliterate the lumen of canals. The disease was due to a micro-organism similar to the bacillus of Friedländer. As several persons were known to have acquired the disease without leaving Vienna it must be presumed that it also existed in the city. In former times such cases were often mistaken for carcinoma or acne rosacea, especially if the localisation was in the alæ nasi. Several patients lived for 15 or 20 years and died of other diseases. Dr. Freund then showed a man with these changes in the nose. Breathing through the nose was only possible with very great difficulty. The patient was treated with 23 gentle applications of the x rays, each lasting six minutes. The result was very satisfactory. The granulating tissue disappeared from the mucosa nasi, the infiltrations of the nose and pharynx softened and the nares became pervious for breathing. Dr. Kahler showed another patient whom he had treated with radium bromide. In this case there were nodules of granulating rhinoscleroma tissue on the upper lip and nose. After seven applications of 60 milligrammes of the salt, each lasting 20 minutes, several nodules disappeared without any marked change in the surrounding healthy skin. As the treatment was very expensive and troublesome, the patient not being able to stay in Vienna, she was referred to the x ray department, where recovery was complete after four sittings.

Sept. 16th.

NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

Fire at the University of Pennsylvania.

As the result of a serious conflagration the University of Pennsylvania has sustained a loss estimated at $40,000. The chief damage resulted through the destruction of microscopes and other accessories for laboratory work, but fortunately the anatomical and surgical preparations lost can be replaced without much difficulty and the necessary repairs to the buildings will not be very extensive.

Increase of Beer-drinking in the United States.

The increasing consumption of malt liquors in the United States is going hand in hand with a commensurate decrease in the amount of the more highly alcoholic liquors used. According to the report of the Commissioner of Internal Revenue in the fiscal year ending with the month of June 49,459,000 barrels of beer were consumed, representing a gain of almost exactly 1,250,000 barrels over the figures for the previous twelvemonth. The quantity of distilled liquors was 116,143,000 gallons, a decrease of 704,000 as compared with the statistics for the year ending in June, 1904. This very desirable trend of the popular preference toward the less intoxicating drinks is to a large extent dependent on the firm stand taken by employers of labour generally in favour of practical abstinence among their men, so that the demand for the powerful stimulants is decreasing and public drunkenness among the working classes is becoming less and less common.

145 Days of Coma.

A case is reported from Yonkers, N.Y., of a boy eight years of age who finally died after having been completely unconscious for 145 consecutive days as the result of cerebro-spinal meningitis.

For the Greater Comfort of Immigrants.

The immigration officials of the port of New York have

lately been making very active efforts to reform certain abuses in the care of the third-class passengers on the large transatlantic liners. Half a dozen captains of large passenger steamers have been arrested for violations of the regulations against overcrowding, for having berths too narrow, or for neglecting to provide proper seating and table accommodation for the passengers at meal times. One captain frankly admitted that he never attempted or pretended to supply chairs to the immigrants at the dining tables and on another vessel it was found that only 50 seats were provided for 702 passengers.

Medical Education in the United States.

Statistics recently published present an encouraging picture of the present status of medical education in the United States. There is abundant evidence to show that the movement having for its object the elevation of the requirements for entrance and graduation has met with general approval and there has been a distinct gain in this direction during the past few years. The State examining boards have brought much pressure to bear in the right direction by raising their requirements and by taking an active part in the regulation of preliminary education. The increase in the length of the teaching year is also gratifying, for while in 1904 56·8 per cent. of the colleges had terms of less than eight months now only 39 per cent. belong to this category and the majority of the students prefer the long term colleges. During the year ending June 30th, 1905, 26,147 persons studied medicine at 157 colleges. Of this number 1073 were women and 5606 were graduated. The students were about 2000 less in number than for the previous year and there were 141 fewer graduates. Only 1104 students attended homœopathic schools, the figures showing a steady decrease since 1900 when there were almost 2000. The attendance at eclectic schools was 578, a falling off of nearly one-half when compared with the number for the previous year but the graduates (153) were more than in any year since 1900. Three of the 157 colleges are for women, 63 for men, and 91 are co-educational.

Yellow Fever at New Orleans.

The situation has improved steadily and now there seems no reason to doubt that the epidemic of yellow fever will speedily terminate in New Orleans although new foci are still being reported in the country districts. The vigorous campaign against mosquitoes has accomplished wonders in the extermination of the pests, culex and anopheles sharing the fate of the stegomyia against which the attack is primarily directed. Up to Sept. 3rd about 2000 cases with not quite 300 deaths have been reported and the figures have been getting lower every day, a remarkable showing in view of the fact that the last two weeks of August usually represent the acme of an epidemic of the disease. Thus in 1855 there were 3000 deaths during the last two weeks of August and in 1878 the mortality increased twelvefold between the first and last weeks of the month. Stories of remarkable instances of quarantine panic are coming to light. In one community admission was refused to a consignment of carbolic acid sent to it for disinfecting purposes and another turned back a cartload of steel rails, while many districts have suffered severely through their exclusion of food-supplies and freight of all kinds even when coming from non-infected localities. Considerable excitement was caused among the uneducated classes in New Orleans by the propaganda of a homœopathic physician from St. Paul, who went to the city preaching the doctrine that immunity to infection could be secured by small daily doses of arsenic. For a time he secured a large following, until it was pointed out that even habitual arsenic eaters succumbed as easily as other people. This recalls the incident of a physician who years ago went to New Orleans during an epidemic to demonstrate his ability to cure yellow fever by the use of a special cot of his invention in which cold affusions could be made without disturbing the patient. He promptly contracted the disease and died in his own cot.

Sept. 8th.

AUSTRALIA.

(FROM OUR OWN CORRESPONDENT.)

Medical Men in the Law Courts.

ON July 3rd Dr. F. G. Connor of Lismore, New South Wales, was sued for £5000 for alleged neglect and unskilfulness in the treatment of a fractured leg. Evidence was given by Dr. A. MacCormick, Dr. T. H. Fiaschi, Dr. Bowker, and Mr. C. P. B. Clubbe to the effect that the treatment was absolutely correct and the result excellent. After a short retirement the jury returned a verdict for Dr. Connor.—At the Sydney district court Mr. H. W. Devlin sued a patient for his fees incurred in attendance for the results of a tram accident. The tramway authorities had given the defendant a certain sum to pay for medical attendance, but he refused to pay when the account was rendered. His defence was that he did not engage Mr. Devlin. The judge made an order for the full amount claimed.—At the same court Dr. H. L. A. Shorter of Petersham sued a lodge patient for a fee for operation on his son for post-nasal growths. It was claimed that the service rendered was not included in the lodge agreement. After hearing evidence from the lodge trustees, the judge gave a verdict for Dr. Shorter on the facts but desired to make it clear that the decision did not govern other lodge cases, nor did he give any interpretation of the document drawn up between this particular lodge and Dr. Shorter.

Attack by an Asylum Patient.

A patient at Gladesville Lunatic Asylum (Sydney), who was regarded by the medical officers as harmless and allowed, as are many of the patients, to leave the asylum and to mix with the public, suddenly attacked a lady, the wife of Dr. L. A. Carter of Sydney, in the street and nearly suffocated her. Dr. E. Sinclair, Inspector-General of the Insane, has made a report on the occurrence. He says it is the first time during the 50 years it has been the custom to allow harmless patients outside the grounds that such a thing has happened. For the future no patients will be allowed beyond the grounds except under the charge of an attendant.

Sir Philip Sydney Jones.

The announcement that the honour of knighthood has been conferred on Dr. Philip Sydney Jones of Sydney has been very gratifying to the profession in Australia. He is universally respected and has held, and still holds, many important positions. The high estimation in which he is regarded was shown by his appointment as President of the Australasian Medical Congress when it met in Sydney in 1892. He is now Vice-Chancellor of the University of Sydney.

Death of Mr. K. I. O'Doherty.

A notable member of the medical profession in Australia has passed away in Brisbane, Mr. Kevin Izod O'Doherty, at the advanced age of 80 years. While still a medical student he entered into the "Young Ireland" movement and joined in founding the *Irish Tribune* in 1848. The journal was suppressed after five issues and Mr. O'Doherty was lodged in gaol on a charge of treason and felony. After three trials he was sentenced to ten years' transportation to Van Diemen's Land. On arrival he was released on parole and his medical services were utilised in St. Mary's Hospital, Hobart. He was pardoned five years later conditional on his residing out of the United Kingdom. He settled in Paris and resumed his medical studies. In 1856 he received an unconditional pardon and returned to Dublin where he was admitted F.R.C.S. Irel. After practising in Dublin for a time he went to Brisbane where he took a leading position in the profession. He was for six years a member of the Legislative Assembly and in 1877 was nominated a member of the Legislative Council. He was a member of the Central Board of Health and at various times surgeon in the volunteer force, medical superintendent of quarantine, and official visitor to the Goodna lunatic asylum. He was President of the Irish National League of Australia and chairman of the Irish Australian Convention held in Melbourne in 1883. In 1886 he went back to Ireland and was returned to the House of Commons for Meath in the Parnellite interest. After a few months he resigned and returned to Queensland. His genial nature endeared him to a very wide circle. Throughout the whole of his long and honourable career in Queensland Mr. O'Doherty evinced the warmest attachment to his native country and her people.

Trained Nurses' Associations.

The annual report of the Australian Trained Nurses' Association (New South Wales) stated that during the year there had been a steady increase in membership in all the States, 120 applications being accepted for admission to the central register, making the total number 759, as against 689 last year; the medical membership has also increased from 75 to 91. The total membership of the association in

Australasia was said to be 1389, made up of 1015 general, 249 midwifery, and 125 medical (all branches).—The annual report of the Royal Victorian Trained Nurses' Association is a lengthy document. The most important work done by the council appears to have been the insistence on all nurses training for special branches, as obstetrics, gynæcology, eye and ear diseases, mental diseases, children's, and infectious diseases, and possessing a certificate of general nursing. The council, however, has to admit a dearth of applicants under these conditions and has had to permit the employment of probationers at the special hospitals on the understanding that they will not be certificated until registered as general nurses. The subjects of invalid cookery, elements of hygiene, and rudiments of dispensing have been added to the curriculum. The council has formulated a somewhat elaborate scheme for the preliminary training and education of probationers. It has also formulated the requirements and extra qualifications for the certificates for hospital matrons.—A public meeting of the Australian Massage Association was recently held in Sydney. The chairman, Dr. Chisholm Ross, gave a short *résumé* of all that has been done in forming the association and pointed out that the movement has the support of the leading medical men in Sydney. The meeting was unanimously of opinion that the association was a good one.

August 12th.

Obituary.

THOMAS SYMONDS HOWELL, M.R.C.S. ENG., L.S.A.

Mr. Thomas Symonds Howell died at his residence, The Old Vicarage, Wandsworth, London, S.W., on Sept. 5th, at the advanced age of 82 years. Mr. Howell's family has had a long connexion with Wandsworth, where three successive generations have been medical practitioners continuously for more than 90 years. His father was Mr. James Howell, whose parents lived in Herefordshire, and who commenced practice in Wandsworth in 1814. Mr. Thomas Howell, the subject of the present notice, received his school education at Blackheath, and when it was decided that he should pursue a medical career he entered as a student at St. Thomas's Hospital. Having taken the diplomas of M.R.C.S. Eng. in 1844 and L.S.A. in 1845, he shared his father's work and continued in the active practice of his profession until about three years ago. For some 35 years he was medical officer to the Royal Masonic Institution for Girls. He was the first president of the South-West London Medical Society and took an active part in its inauguration. He was also chairman of the Wandsworth and Putney Gas Light and Coke Company. He married a daughter of the late Mr. Daniel Watney of Distillery House, Wandsworth, and had a large family. Mrs. Howell survives her husband and 11 of their children are still living, two of them being medical practitioners in the neighbourhood of Wandsworth. Mr. Howell had a wonderful power of obtaining the full confidence of his patients. He was a cheery optimist and a hard worker, and being possessed of a sound judgment and a plentiful supply of the milk of human kindness there is no wonder that he met with success in a calling for which he was eminently suited. He was a fine type of general practitioner.

THOMAS HERBERT LITTLEJOHN, M.B., C.M. EDIN., F.R.C.S., D.P.H. EDIN.

Dr. Thomas Herbert Littlejohn, medical officer of health of Hampstead, died on Sept. 4th at his residence, 37, Buckland-crescent, Belsize Park. He had for a considerable time suffered from insomnia for which he occasionally made use of sulphonal and it was to an overdose of this substance taken on August 30th that the fatal result was attributed. At an inquest held on Sept. 6th by Mr. Walter Schröder the jury returned a verdict of "Death by misadventure." The deceased was one of the sons of Sir Henry Duncan Littlejohn of Edinburgh. He was educated first at the Edinburgh Academy and subsequently at the University of Edinburgh, where he graduated as M.B. and C.M. in 1889. He then acted as house surgeon in the Royal Infirmary to the late Mr. John Duncan and afterwards held similar posts at Carlisle and Preston. On returning to Edinburgh he took his Fellowship of the Royal College of Surgeons of Edinburgh and also the diploma of D.P.H. From 1891 to 1895 he assisted his father in his duties as medical officer of health and surgeon of police. In November, 1895, he was appointed medical officer of health and public analyst of Scarborough. During his first year of office he advocated strongly the erection of a modern isolation hospital and had the satisfaction of seeing his recommendations and plans carried out. He was also instrumental in procuring the erection of a destructor and in obtaining the Scarborough order giving powers to the corporation on the report of the medical officer of health to provide water-closet accommodation to dwelling-houses where other forms of excrement disposal were in use. In 1901 he was appointed medical officer of health of Hampstead out of a large number of applicants. In 1899 he married Miss Ripley of Ashley Manor, Cheltenham, who survives him. He had no family.

The funeral took place on Sept. 7th. After cremation of the remains at the Golders-green Crematorium, Hampstead, the ashes were interred in a grave in Hampstead Cemetery.

Medical News.

THE YELLOW FEVER OUTBREAK AT NEW ORLEANS.—The secretary of the Liverpool School of Tropical Medicine has received the following information with regard to the epidemic of yellow fever at New Orleans from Messrs. Lamport and Holt, who received it from their agents at New Orleans: "The mosquito fever in New Orleans is under control and the 'yellow panic' in the country will soon subside. That the campaign against mosquitoes is successful is shown in the accompanying comparative table of deaths this month from fever, as compared with that of 1878; and it must be borne in mind that in August, 1878, the population of the city was much smaller and the exodus during that year much greater than this year. In August, 1878, there were 125,000 people in the city; now there are 300,000, after allowing fully for absentees, which makes the figures more striking. That the fever had secured a stronger footing in July, 1905, than it had in July, 1878, is shown from the fact that in July, 1878, the deaths from fever were 39, which in July, 1905, were 62; it is therefore clear that with double the population and a better start the deaths in August, 1905, should greatly exceed those of August, 1878. Just the reverse, however, is the case, and it is notable that in August, 1878, the daily deaths increased progressively, but this year it is not so:—

	1905.	1878.		1905.	1878.
July	62	39	August 10th ...	5	8
August 1st ...	6	7	,, 11th ...	9	14
,, 2nd ...	11	7	,, 12th ...	9	12
,, 3rd ...	5	7	,, 13th ...	12	21
,, 4th ...	5	11	,, 14th ...	12	20
,, 5th ...	8	12	,, 15th ...	6	17
,, 6th ...	8	5	,, 16th ...	4	29
,, 7th ...	8	7	,, 17th ...	4	27
,, 8th ...	4	11	,, 18th ...	8	47
,, 9th ...	7	12	,, 19th ...	4	41

The above, we submit, affords good grounds for believing that the disease is in hand and that the worst is over. There are still a great many mosquitoes left but the war against them is being relentlessly pressed. Another significant fact is that during July, 1905, the deaths were 25 per cent. of the cases. Now the rate is reduced to 7 per cent. of the total deaths, as July and August only show 14 per cent. of the total cases. The local stock market is advancing and that is a very reliable barometer of public opinion."

REACTION AGAINST THE PIROGOFF SOCIETY'S POLITICAL RESOLUTION.—Following on the protest of the Yaroslaff medical men against the resolution of the Pirogoff Society to abstain from taking part in the Government committees in connexion with the cholera a number of Simferopol medical men also protest, saying that they join their Yaroslaff brethren against the action of the Pirogoff Society in branding with shame the medical men who may decide to join the Government committees, adding that such despotic orders are in direct contradiction to the claims of the society for free speech

action, &c. They continue: "Let members join and do what they like, but to force others to desist under pain of 'judgment' constitutes at least arrogance." "We protest," they conclude, "against all arrogance, but, above all, against corporate tyranny."

UNWHOLESOME SHELL-FISH.—Dr. T. Dunlop, medical officer of health of Torquay, has issued public notices urging the inhabitants of the district to refrain from eating cockles and mussels for the reason that for the most part these shell-fish are collected from the beds of rivers in the neighbourhood into which large quantities of town sewage are poured. A death from enteric fever, caused by eating cockles, has recently occurred in Torquay.

MEDICAL MAGISTRATES.—Mr. John Blair, M.D. R.U.I., honorary assistant surgeon to the Royal Albert Edward Infirmary, Wigan, and Mr. George Wolstenholme, M.B., C.M. Glasg., have been appointed magistrates for the county borough of Wigan.—Dr. F. J. Waldo, Barrister of the Middle Temple, His Majesty's coroner for the City of London and Southwark, has been placed by the Lord Chancellor on the commission of the peace for the county of London.

BRIGHTON AND SUSSEX MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on Sept. 14th, Dr. A. Newsholme, the President, being in the chair.—Dr. L. A. Parry showed an elderly woman with a large Crescentic Patch of Atrophy round the Left Optic Disc.—Dr. Walter Broadbent showed a man, aged 28 years, with Paresis and Wasting of Both Hands and Forearms of recent onset and some Spastic Paraplegia of the Legs. There were no anæsthesia, no loss of sensation of heat and cold, and no pain. The diagnosis was a gumma pressing on the front of the cord in the lower part of the cervical enlargement.—The President read his inaugural address entitled "The Economic and other Causes which have brought about the Past Reduction in the Death-rate from Tuberculosis, with special reference to the Influence of Workhouse Infirmaries." He passed in review the various possible causes of the decrease of pulmonary tuberculosis, the decreased price of food, the less cost of living, the increased wages, and the better drainage of towns, and showed by statistics that none of these could claim to be the real cause but found that the steady increase in the proportion of all cases of pulmonary tuberculosis who died in infirmaries or hospitals (and so were prevented from conveying infection during the last months of their lives) corresponded most closely with the curve of the decrease of pulmonary tuberculosis. The paper was listened to with great interest by an unusually large meeting and was followed by a discussion.

BOOKS, ETC., RECEIVED.

ARROWSMITH, J. W., Quay-street, Bristol. (WHITTAKER AND CO., 2, White Hart-street Paternoster-square, London.)
University College, Bristol. Calendar for the Session 1905–1906. Price 1s.

BAILLIÈRE, J. B., ET FILS, 19, Rue Hautefeuille, Paris.
Les Actualités Médicales. Les Traitements des Entérites. Par le Dr. Maurice Jousset. Price fr. 1.50.

CHURCHILL, J. AND A., 7, Great Marlborough-street, W.
The Apsley Cookery Book, containing 448 Recipes for the Uric-acid-free Diet. By Mrs. John J. Webster and Mrs. F. W. Jessop. Price 3s. 6d. net.

CHURCH OF ENGLAND TEMPERANCE SOCIETY, 4, Sanctuary, Westminster, S.W.
A First Reader in Health and Temperance. By W. Taylor, Master of Method, Battersea Training College, and Head Master of Sir Walter St. John's School. Price not stated.

GLAISHER, HENRY J., 57, Wigmore-street, Cavendish-square, W.
Indigestion. The Diagnosis and Treatment of the Functional Derangements of the Stomach. By George Herschell, M.D. Lond., Fellow of the Royal Medico-Chirurgical Society, Senior Physician to the Queen's Jubilee Hospital. Third edition, entirely re-written. Price 5s. net.

GRANVILLE PRESS, LIMITED, 27, Fetter-lane, E.C.
Pannell's Reference Book. For Home and Office. A Commercial, Medical, Legal, Social, Educational, and General Guide. Price 6s. 6d. net.

GREEN, WILLIAM, AND SONS, Edinburgh and London.
Essentials of Human Physiology. By D. Noël Paton, M.D., B.Sc., F.R.C.P. Ed., Superintendent of the Research Laboratory of the Royal College of Physicians of Edinburgh. Second edition, revised and enlarged. Price not stated.

HIRSCHWALD, AUGUST, Unter den Linden, 68, Berlin, N.W.
Allgemeine Fieberlehre. Von Dr. Eduard Aronsohn, Ems-Nizza. Price M 5.

KARGER, S., Karlstrasse, 15, Berlin, N.W.
Grundriss eines Systems der Medizinischen Kulturgeschichte. Nach Vorlesungen an der Berliner Universität (Wintersemester 1904-5). Von Dr. Julius Pagel, a.o. Prof. der Geschichte der Medizin. Price M.2.50.

KIMPTON, HENRY, 13, Furnival-street, Holborn, E.C.
Kimpton's Essential Series. Essentials of Medical Electricity. By Edward Reginald Morton, M.D., C.M., Trinity University, Toronto; D.P.H., F.R.C.S. Ed.; Medical Officer in Charge of the Electrical Department, London Hospital; Honorary Secretary of the British Electro-therapeutic Society, &c. Price 4s. 6d. net.
The Medical Diseases of Egypt. By F. M. Sandwith, M.D., F.R.C.P., Consulting Physician to H.M. the Khedive and to Kasr-el-Ainy Hospital, Cairo; Lecturer at the London School of Tropical Medicine; formerly Vice-Director of the Sanitary Department of Egypt and Professor of Medicine and Examiner at the Egyptian Government School of Medicine. Part I. Price 7s. 6d. net.
Acute Contagious Diseases. By William M. Welch, M.D., Diagnostician to the Bureau of Health and Consulting Physician to the Philadelphia Municipal Hospital for Contagious and Infectious Diseases, and Jay F. Schamberg, A.B., M.D., Professor of Dermatology and of Infectious Eruptive Diseases, Philadelphia Polyclinic and College for Graduates in Medicine, Assistant Diagnostician to the Bureau of Health and Consulting Physician to the Municipal Hospital for Contagious and Infectious Diseases. Price 25s. net.

LAURIE, T. WERNER, Clifford's Inn, Fleet-street, E.C.
The Cathedrals of England and Wales. By T. Francis Bumpus, author of "Holidays among the Glories of France," "The Cathedrals of North Germany," &c. First series. With 25 full-page plates. Price 6s. net.

P. BLAKISTON'S SON AND CO., 1012, Walnut-street, Philadelphia, U.S.A.
A Text-book of Physiological Chemistry for Students of Medicine. By John H. Long, M.S., Sc.D., Professor of Chemistry in North-Western University Medical School, Chicago. Price not stated.

REBMAN, LIMITED, 129, Shaftesbury-avenue, W.C.
Select Methods in Food Analysis. By Henry Leffmann, A.M., M.D., Ph.D., and William Beam, A.M., M.D., F.I.C. Second edition, revised and enlarged. Price 11s. net.
Enlargement of the Prostate. By John B. Deaver, M.D., Surgeon-in-Chief to the German Hospital, Philadelphia; assisted by Astley Paston Cooper Ashhurst, M.D., Surgeon to the Out-patient Department of the Episcopal Hospital. Price 30s. net.
Radiotherapy in Skin Disease. By Dr. J. Belot. With a Preface by Dr. L. Brocq, Physician to the Broca Hospital, Paris. Translated by W. Deane Butcher, M.R.C.S., Surgeon to the London Skin Hospital. Only authorised translation from the second French edition. Price 17s. net.
Appendicitis. By John B. Deaver, M.D., Surgeon-in-Chief to the German Hospital, Philadelphia. Third edition, thoroughly revised and enlarged. Price 30s. net.

SWAN SONNENSCHEIN AND CO., LIMITED, London.
The Needs of Man: a Book of Suggestions. By W. Winslow Hall, M.D. Price 3s. 6d. net.

UNIVERSITY PRESS, Cambridge. (Cambridge University Press Warehouse, C. F. CLAY, Manager, Fetter-lane, London, E.C.)
Immunity in Infective Diseases. By Elie Metchnikoff, Foreign Member of the Royal Society of London, Professor at the Pasteur Institute, Paris. Translated from the French by Francis G. Blanie, of the Pathological Department, University of Cambridge. Price 18s. net.

WOOD, MITCHELL, AND CO., LIMITED, Oriel Works, Park-street, Hanley.
Guide to Finger-Print Identification. By Henry Faulds, L.F.P.S., late Surgeon Superintendent of Tsukiji Hospital, Tokyo, Japan. Price 5s. net. (Postage 3d.)

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

BREBNER, C. S., M.D., Ch.B. Edin., D.P.H., has been appointed Medical Officer of Health to the Widnes Town Council.

BRODRICK, C. C., L.R.C.P. L.R.C.S. Edin., has been re-appointed Medical Officer of Health for the Tavistock Rural and Urban Districts, Devon.

BROWNE, JOHN WALTER, M.B., B.S., R.U.Irel., has been appointed Public Vaccinator at Rawene and Kohukohu, New Zealand.

COCKELL, EDWARD SEATON, M.R.C.S., L.S.A., has been appointed Medical Officer and Public Vaccinator for the Greatham District of Hartlepool.

CROOKE, ROBERT WARREN, L.R.C.P. Edin., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Government Medical Officer and Vaccinator at Gunnedah, New South Wales.

D'ARCY, CONSTANCE E., M.B., Ch.M. Syd., has been appointed Resident Medical Officer, Royal Hospital for Women, Sydney, New South Wales.

DERRY, B. G., M.R.C.S., L.R.C.P. Lond., has been re-appointed Medical Officer of Health for the Borough of Bodmin (Cornwall).

HARDING, HAROLD WILLIAM LITTON, M.R.C.S., L.R.C.P. Lond., has been appointed Public Vaccinator for the Districts of Upper Hutt, Lower Hutt, and Petone, New Zealand.

HENRY, E., F.R.C.S. Eng., L.R.C.P. Lond., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Long Sutton District of the county of Lincoln.

LAIRD, A. J., M.D. Glasg., has been re-appointed Medical Officer of Health to the Borough of Crewe.

MCGAVIN, LAWRIE, F.R.C.S. Eng., has been appointed Consulting Surgeon to the Convent of the Assumption, Kensington-square, W.

MACVIE, S., M.B., M.S. Edin., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Chirnside District of the county of Berwick.

MCWALTER, J. C., D.P.H., F.F.P.S. Glasg., M.D. Brux., has been appointed Examiner in Pharmacy to the Apothecaries' Hall of Ireland.

MUIR, WM., M.B., C.M. Glasg., has been appointed Medical Officer to the Post Office in Davidsons Mains District, Midlothian.

O'MEEHAN, P., L.D.S. R.S.C.I., has been appointed Honorary Consulting Dental Surgeon, St. John's Hospital, Limerick.

PAUL, G. F., M.D. Brux., M.R.C.S. Eng., L.R.C.P. Lond., has been appointed Government Medical Officer and Vaccinator at Cobar, New South Wales.

PERN, E. C., M.R.C.S., L.R.C.P. Lond., has been re-appointed Medical Officer of Health for the Droxford Urban District Council, Hants.

RABY, LEONARD, M.D. Durh., has been re-appointed Medical Officer for the Second District by the Devizes Board of Guardians.

ROANTREE, J., M.B., B.S. R.U.I., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Newbridge District of the county of Kildare.

ROUTLEY, E. W., M.R.C.S., L.R.C.P. Lond., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Aldershot District of the County of Hants.

YOUNG, RALPH, M.D. Durh., has been re-appointed Medical Officer of Health to the Royton District Council, Durham.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

ABERDEEN ROYAL INFIRMARY.—Assistant Surgeon.

BEDFORD COUNTY HOSPITAL.—House Physician. Salary £60 per annum, with apartments board, and washing.

BRIGHTON THROAT AND EAR HOSPITAL, Church-street, Queen's-road.—Non-resident House Surgeon for six months, renewable. Salary at rate of £75 per annum.

BRISTOL EYE HOSPITAL.—House Surgeon. Salary £80, board and residence.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria-park, E.—Two House Physicians (male) for six months, with board, washing, and residence. Salary at rate of £30 per annum. Also Pathologist. Salary 100 guineas per annum.

CROYDON GENERAL HOSPITAL.—Senior and Junior House Surgeons. Salary, senior position £105, junior position £60, with board, laundry, and residence.

DUDLEY, THE GUEST HOSPITAL.—Assistant House Surgeon for six months. Salary £40 per annum, with residence, board, and washing.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark, S.E.—Eight qualified Clinical Assistants.

FARRINGDON GENERAL DISPENSARY, 17, Bartlett's-buildings, Holborn-circus, E.C.—Resident Medical Officer. Salary £120 per annum, with apartments, coals, gas, and attendance.

GROVE HALL ASYLUM, Bow, London, E.—Assistant Medical Officer. Salary at rate of £150, with board, apartments, attendance, and washing.

HARTSHILL, STOKE-UPON-TRENT, NORTH STAFFORDSHIRE INFIRMARY AND EYE HOSPITAL.—Senior House Surgeon. Salary £100 per annum, with apartments board, and washing.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton.—Resident House Physicians for six months. Honorarium £25.

HOSPITAL FOR WOMEN, Soho-square, W.—House Physician for six months. Salary £30.

KIDDERMINSTER INFIRMARY AND CHILDREN'S HOSPITAL.—House Surgeon. Salary £120 (increasing to £150), with rooms and attendance.

LANCASHIRE COUNTY ASYLUM, Winwick, Warrington.—Assistant Medical Officer, unmarried. Salary £150 per annum, increasing to £350, with apartments, board, attendance, and washing.

LEEDS GENERAL INFIRMARY, Leeds.—Laboratory Curator. Salary £150 per annum.

LEICESTER, CORPORATION OF, ISOLATION HOSPITAL.—Resident Medical Officer for the Borough Isolation Hospital. Salary £120 a year, with board and residence.

LEYTON, WALTHAMSTOW AND WANSTEAD CHILDREN'S AND GENERAL HOSPITAL, Orford-road, Walthamstow.—House Surgeon. Salary £100 per annum, with rooms, board, &c.

LIVERPOOL, CITY OF, FAZAKERLEY HOSPITAL FOR INFECTIOUS DISEASES.—Medical Superintendent. Salary £400 per annum, increasing to £600, with house, coal, and lighting.

LONDON HOSPITAL, Whitechapel, E.—Physician.

LONDON THROAT HOSPITAL, 204, Great Portland-street, W.—House Surgeon for six months. Salary at rate of £50 per annum.

MANCHESTER ROYAL INFIRMARY.—Resident Surgical Officer, unmarried. Salary £150 per annum, with board and residence.

MANCHESTER SOUTHERN AND MATERNITY HOSPITAL.—Resident House Surgeon. Honorarium at rate of £60 per annum, and board.

NORFOLK AND NORWICH HOSPITAL.—Honorary Assistant Physician.

PADDINGTON INFIRMARY.—Clinical Assistant and Second Assistant to the Medical Superintendent (unmarried) for six months. Honorarium £36, with board, lodging, and washing.

RAINHILL, NEAR LIVERPOOL, COUNTY ASYLUM.—Assistant Medical Officer, unmarried. Salary £150 per annum, increasing to £350, with apartments, board, and washing.

REETH UNION.—Medical Officer of Health and District Medical Officer. Salary £50 per annum for Medical Officer of Health and £45 for District Medical Officer, in addition to vaccination fees for Muker Vaccination District, average about £12 per annum.

ROYAL DENTAL HOSPITAL AND LONDON SCHOOL OF DENTAL SURGERY, Leicester-square.—Lecturer on Dental Surgery and Pathology.

ROYAL DENTAL HOSPITAL, Leicester-square.—Morning House Anæsthetist. Honorarium £50 per annum.

ROYAL LONDON OPHTHALMIC HOSPITAL (MOORFIELDS EYE HOSPITAL), City-road, E.C.—Senior House Surgeon. Salary at rate of £100 a year, with board and residence.

ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN, Leicester-square, W.C.—Pathologist.

ST. THOMAS'S HOSPITAL.—Physician for Mental Diseases. Also Two Dental Surgeons. Also Assistant Pathologist and Demonstrator of Morbid Anatomy.

SALISBURY GENERAL INFIRMARY.—House Surgeon. Salary £100 per annum, with apartments, board, and lodging. Also Assistant House Surgeon. Salary £50 per annum, with apartments, board, and lodging.

SEAMEN'S HOSPITAL SOCIETY, Greenwich, S.E.—DREADNOUGHT HOSPITAL, Greenwich.—House Physician. Salary £65 per annum. House Surgeon. Salary £65 per annum. Junior Resident Medical Officer. Salary £40 per annum. At the BRANCH HOSPITAL, Royal Victoria and Albert Docks.—Senior House Surgeon. Salary £100 per annum. House Surgeon. Salary £50 per annum. With board, residence, and washing in each case.

SOUTHPORT INFIRMARY.—Resident Junior House and Visiting Surgeon, unmarried, for six months. Salary at rate of £70 per annum, with residence, board, and washing.

THROAT HOSPITAL, Golden-square, W.—House Surgeon. Stipend £50 per annum, with board, residence, and laundry.

VICTORIA HOSPITAL FOR CHILDREN, Tite-street, Chelsea, S.W.—House Surgeon for six months. Honorarium of £25, with board and lodging.

WAKEFIELD, WEST RIDING ASYLUM.—Assistant Medical Officer. Salary £140, rising to £160, with board, lodging, washing, &c.

WEST HAM UNION.—Assistant Medical Officer. Salary £125 per annum.

WESTERN GENERAL DISPENSARY, Marylebone-road, N.W.—Honorary Anæsthetist.

WISBECH, NORTH CAMBRIDGESHIRE HOSPITAL.—Male Resident Medical Officer (unmarried) for six months. Salary £100 per annum, with rooms, attendance, &c.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—House Surgeon. Salary £100 per annum, with board, lodging, and washing.

YORK DISPENSARY.—Resident Medical Officer, unmarried. Salary £120 a year, with board, lodging, and attendance.

THE Chief Inspector of Factories, Home Office, S.W., gives notice of a vacancy as Certifying Surgeon, under the Factory and Workshop Act, at Crowborough, in the county of Sussex.

Births, Marriages, and Deaths.

BIRTHS.

BAWTREE.—On Sept. 15th, at The Lodge, Maldon, Essex, the wife of Frank Bawtree, M.R.C.S., L.R.C.P., of a son.

EDWARDS.—On Sept. 14th, at Chilchester, London-lane, Bromley, Kent, the wife of John M. Edwards, M.R.C.S., L.R.C.P., of a son.

HIGHET.—At Bangkok, Siam, on the 11th August, the wife of Dr. H. Campbell Highet, Principal Medical Officer, Local Government, Siam, of a son.

LININGTON.—On Sept. 13th, at Radnor Park-avenue, Folkestone, the wife of William West Linington, F.R.C.S.—a daughter.

WILLIAMSON.—On Sept. 12th, at Blaby, Leicester, the wife of Lieutenant-Colonel J. G. Williamson, R.A.M.C. (Ret.), of a daughter.

MARRIAGES.

GILL—ANDERSON.—At St. Thomas' Cathedral, Bombay, on Sept. 1st, Clifford Allchin Gill, Lieutenant, Indian Medical Service, eldest son of the late Henry Clifford Gill, to Jean, second daughter of James Anderson, Esq., of Stockbridge, Ecclefechan, N.B.

KEELING—WOOD.—On Sept. 16th, at West Dulwich, Hugh Nevill Keeling, M.R.C.S., L.R.C.P., of 26, Bagdale, Whitby, third son of the Rev. W. H. Keeling, to Caroline Mary, fourth daughter of Daniel Wood, of West Norwood.

PRYCE—CLARKE.—On Sept. 13th, at St. Andrew's Church, Clayhidon, Harold Vaughan Pryce, F.R.C.S., to Marian Frances Violet, elder daughter of Rev. Walrond Clarke, Clayhidon, Devon.

SEVIER—SADGROVE.—On Sept. 12th, at the parish church, Winston, Alfred Hynam Sevier, M.B., to Edith Léonie Frances, second surviving daughter of the Rev. F. E. and Mrs. Sadgrove, Winston Rectory, Darlington.

TAYLOR—STANSFELD.—On Sept. 12th, at Wrangthorne Church, Leeds, by the Rev. R. V. Taylor, B.A., Rector of Melbecks, Richmond, Yorks (uncle of the bridegroom), Frank Edward Taylor, M.Sc., M.A., M.B., F.R.C.S., M.R.C.P., 11, Bentinck-street, Cavendish-square, W., to Phœbe, eldest daughter of the late William Edward Stansfeld and of Mrs. Stansfeld of Ash Grove, Leeds.

DEATHS.

BATTYE.—At 84, Belgrave-road, S.W., on Sept. 20th, John Howard Battye, M.D., younger son of the late Dr. R. Fawcett Battye, of 123, St. George's-road, S.W., aged 52. Funeral service at St. James-the-Less, Westminster, 10.45 A.M. Saturday. No other intimation.

KIRTON.—On August 23rd, Marjorie, dearly loved twin baby of Rex and Nellie Kirton.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

SANITATION AT ST. MORITZ.

IN our issue of August 19th we published a letter from Dr. T. W. Parkinson, mentionin that some patients under his care who had gone to St. Moritz complained of "the faulty drainage and consequent bad smells" encountered there. In reply to this THE LANCET of Sept. 16th contained a letter signed jointly by Dr. J. Frank Holland, the British Consul at St. Moritz, and Dr. Paul Gredig, President of the Society of Practising Physicians of the Upper Engadine. These gentlemen, while admitting "that in certain portions there were bad smells and that the visitors complained of them," maintained positively that the main drainage was sound, that the public health was in no way endangered, and that St. Moritz had been free from all those zymotic maladies that are associated with inefficient drainage. In corroboration of this opinion Dr. Holland has now forwarded to us a communication signed by Dr. L. Juvalta, medical officer of health of the district (Bezirksarzt), showing all the cases of infectious disease reported to him from St. Moritz during the period from October, 1904, to Sept. 11th, 1905. The results are as follows: in October, November, and December, 1904, no cases; in January, 1905, one imported case of enteric fever; in February one case of diphtheria and some imported cases of scarlet fever; in March, no cases; in April, one case of rubeola; in May, one case of croup; in June, two imported cases of scarlet fever; in July, two imported cases, one of scarlet fever and one of enteric fever; and in August and September up to date, no cases.

THE BRITISH ALMANAC.

To the Editors of THE LANCET.

SIRS,—Would it be possible for you to make such representations as would prevent the appearance of the names and addresses of a few consulting physicians and consulting surgeons practising in London, under the heading, "Celebrities of the Day," in the next issue of "The British Almanac"? This periodical is published by Letts. In the edition of the almanac for 1906 the names and addresses of several of our brethren are given, with various comments, of which the following are examples—namely: "An authority on disorders of the digestion;" "an authority on antisepsis and the treatment of wounds;" "eminent physician, an authority on nervous disorders and diseases of the brain;" "eminent surgeon and authority on diseases of the brain;" "one of the leading operators in London, an authority on hernia and peritonitis;" "an authority on the surgery of the intestines."

I am, Sirs, yours faithfully,

Birmingham, Sept. 19th, 1905. JAMES SAWYER.

THE BARKER MASSAGE MACHINE.

THERE are many and various apparatuses for giving mechanical massage and although, of course, no mechanical apparatus can altogether replace the human hand, yet a machine-driven instrument can produce sundry effects which the human hand cannot. The Barker massage machine is decidedly the best which we have seen for producing rapid vibratory movement. It is driven by a small electric motor which can easily be attached to the ordinary lamp supply and the motors are manufactured in various types corresponding to the nature of the current employed. The motion of the motor is transmitted to the vibratory apparatus by means of the ordinary flexible cable used for driving a dental engine. The vibratory apparatus itself is made of various materials and in various shapes and sizes for application to various parts of the body. We made personal trial of one or two of these and find that the effects are perfectly comfortable. There is no unpleasant knocking or jarring, as is the case with so many mechanically driven vibrators. The machine is almost noiseless and the vibrations are particularly even, the effect reminding the observer of that produced by a rapidly alternating electrical current. The London depôt whence the apparatus can be obtained is at 99, Regent-street, W. It does not appear to have been exploited as a means of cure for all and sundry diseases to be applied by any person who considers that he can treat himself.

STARTING HANDLE FOR MOTOR CARS.

To the Editors of THE LANCET.

SIRS,—I wish to bring before the notice of medical men who own six-horse power Wolseley cars the fact that I have recently had a *fixed* starting handle fitted to my small car. To my mind the frequent handling of the long handle as supplied by the Wolseley Company was a great nuisance, especially for doctors who require to stop and start often in the course of their rounds. I may add that the fixed handle is of a telescopic nature and is very easily manipulated and gives no trouble whatever.—I am, Sirs, yours faithfully,

CHARLES ORMEROD, M.D. Brux., M.R.C.S., L.R.C.P.

Burgess Hill, Sussex, Sept. 13th, 1905.

HOMING PIGEONS ATTACHED TO A FLOATING HOSPITAL.

THE homing pigeon is to be utilised in connexion with the hospital steamer *Columbia*, Victoria, B.C., belonging to the Anglican Church. The *Columbia* is specially designed to render ready aid to those who may be injured in the coast logging camps. Accidents are of almost daily occurrence and many deaths have resulted from inability to get the injured men to a hospital in due time. The difficulty of bringing all the camps into constant touch with the steamer in order that she may respond to calls for aid with necessary promptitude has now been solved by the establishment of a pigeon corps. Several hundred birds are to be provided with quarters in a home loft at Rock Bay. The young birds, after a few trial flights, will be distributed among the camps and when medical aid is required a message will be sent by the homers to the hospital ship, which will make Rock Bay her headquarters.

PAPER BAGS AND OTHER SOURCES OF DISEASE.

To the Editors of THE LANCET.

SIRS,—There are many sources of disease apparently so self-evident that they receive but slight, if any, attention by the authors of text-books. And this is my apology for directing the subject to the wider notice of the profession. The following are a few of the innumerable ways by which infectious diseases are quite unintentionally disseminated, for "thoughtlessness is precisely the chief public calamity of our day."

Paper bags.—To open them the practice of blowing against their edges and into them is very common, and nearly all confectioners, fruiterers, grocers, and purveyors of food adopt this plan. The possibilities which might ensue if the breath were infected by the germs of a specific disease can be easily imagined.

Waste paper.—The use of old newspapers, &c. (often bought at rag-shops), in poorer districts to wrap food in also deserves attention.

Drinking glasses.—Even at many high-class schools thirsty boys and girls are inadequately provided with clean glasses and drink after each other. The remedy is simple—every child might be provided with a glass to take to school in a wicker case.

Eating.—The danger to adults, and particularly children, who bite sweetmeats after each other is obvious and should be explained to them.

Kissing.—This danger has been often referred to and the practice of children kissing each other at school should be prohibited. If the heads of schools at the commencement of the session and at all subsequent sessions would give an interesting little health lecture to their charges I am satisfied it would do a great amount of good.

I might conclude by saying that my experience extends to a period not far short of a quarter of a century and I am confident in my own mind that many cases I have attended could have been traced (and some were) to such causes as indicated above.

I am, Sirs, yours faithfully,

MYER DUTCH, M.D. Durh., D.P.H. Cantab., &c.

Cricklewood, Sept. 12th, 1905.

THE CARDIO-VASCULAR EFFECTS OF DORMIOL AND HEDONAL.

M. Mayor, in a contribution to the Société de Thérapeutique de Paris (Répertoire de Pharmacie, 1905, No. 5, p. 237), compares the value of dormiol and hedonal with that of chloral. He considers that hedonal is too slightly soluble for convenient administration and that the disagreeable taste of dormiol is a disadvantage. These objections would not count for much were the remedies free from deleterious action on the vessels and the heart. But M. Mayor has seen aged dogs with old cardiac lesions succumb to hedonal. M. Mayor would administer hedonal only after other drugs had failed. As for dormiol, he considers it to be far inferior to hedonal.

DEATH IN JUDICIAL HANGING.

To the Editors of THE LANCET.

SIRS,—Although the following extract from the *Gentleman's Magazine* for November, 1740 (p. 570), contains nothing that will help your correspondent "Enquirer," there is so much that is of medical interest in the circumstances which it narrates that a place may be asked for it in THE LANCET.

MONDAY, 24.

Five malefactors were executed at *Tyburn*, viz., *Thomas Clack*, *William Meers*, *Margery Stanton*, *Eleanor Mumpman*, for several Burglaries and Felonies; and *William Duell* for ravishing, robbing, and murdering *Sarah Griffin* at *Acton*. The Body of this last was brought to *Surgeon's Hall* to be anotomis'd [*sic*]; but after it was stripp'd and laid on the Board, and one of the Servants was washing him in order to be cut, he perceived Life in him, and found his breath to come quicker and quicker; on which a Surgeon took some Ounces of Blood from him; in two Hours he was able to sit up in his Chair, and in the Evening was again committed to *Newgate*.

It would be worth knowing whether, in the days when executions were not infrequent in this country, and when batches sometimes of 20, 30, and 40 persons suffered together, coroners' inquests were held upon the bodies. Was a medical certificate of death in each case demanded by the legislature? Your medico-legal readers will perhaps furnish information upon these points. I am, Sirs, yours faithfully,

Sept. 18th, 1905. W. R.

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (25th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.).

TUESDAY (26th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Central London Throat and Ear (2 P.M.).

WEDNESDAY (27th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Royal Orthopædic (3 P.M.).

THURSDAY (28th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), St. Mark's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Orthopædic (9 A.M.), Royal Ear (2 P.M.).

FRIDAY (29th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden square (9.30 A.M.), City Orthopædic (2.30 P.M.), Soho-square (2 P.M.), Central London Throat and Ear (2 P.M.).

SATURDAY (30th).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MONDAY (25th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies street, W.C.).—4 P.M. Mr. T. J. Hitchins: Clinique. (Skin.)

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road W.). 2 P.M. Dr Arthur: Skiagraphy.

TUESDAY (26th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies street, W.C.).—4 P.M. Dr. W. Ewart: Clinique. (Medical.)

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.). 10 A.M. Dr. Shuter: Anæsthetics. 5 P.M. Dr. Abraham: Skin Diseases.

WEDNESDAY (27th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies street, W.C.).—4 P.M. Mr. P. L. Daniel: Clinique. (Surgical.)

POST GRADUATE COLLEGE (West London Hospital, Hammersmith-road W.).—3 P.M. Mr Bidwell: Intestinal Anastomoses.

THURSDAY (28th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies street, W.C.).—4 P.M. Mr. Hutchinson: Clinique. (Surgical.)

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road W.).—2 P.M. Dr. Arthur: Skiagraphy.

FRIDAY (29th).—MEDICAL GRADUATES COLLEGE AND POLYCLINIC, (22, Chenies-street, W.C.).—4 P.M. Clinique (Eye.)

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—10 A.M. Dr Shuter: Anæsthetics 3 P.M. Dr Abraham: Skin Diseases. 4 30 P.M. Mr. Bidwell: Intestinal Surgery.

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

TO SUBSCRIBERS.

WILL Subscribers please note that only those subscriptions which are sent direct to the Proprietors of THE LANCET at their Offices, 423, Strand, W.C., are dealt with by them? Subscriptions paid to London or to local newsagents (with none of whom have the Proprietors any connexion whatever) do not reach THE LANCET Offices, and consequently inquiries concerning missing copies, &c., should be sent to the Agent to whom the subscription is paid, and *not* to THE LANCET Offices.

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METEOROLOGICAL READINGS.

(Taken daily at noon by Steward's Instruments.)

THE LANCET Office, Sept. 21st, 1905.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radiation in Vacuo.	Maximum Temp. in shade.	Min. Temp	Wet Bulb.	Dry Bulb.	Remarks.
Sept. 15	30·29	N.E.	...	107	62	46	49	51	Fine
,, 16	30·19	N.W.	...	106	65	50	52	56	Overcast
,, 17	30·36	N.E.	...	103	65	52	51	53	Fine
,, 18	30·14	N.E.	...	114	65	52	55	57	Dull
,, 19	29·89	N.E.	...	99	65	52	52	54	Dull
,, 20	30·04	N.W.	...	93	62	51	53	56	Fine
,, 21	30·13	N.E.	...	97	59	47	48	51	Fine

During the week marked copies of the following newspapers have been received: *Catholic Times, Yorkshire Post, Wigan Observer, Western Mail, Westminster Gazette, Birmingham Post, East End News, Daily Telegraph, West London Gazette, Hampshire Advertiser, South Tottenham Union Guardian, Southampton Echo, Acton Gazette, Halifax Courier, Morning Advertiser, Financial News, Daily News, Edinburgh Evening News, Scottish Review, London Times, Wolverhampton Midland Express, Darlington Times, Citizen, Newcastle Chronicle, Kentish Mercury, Herts Mercury, Literary Digest (New York), Scientific American, Glasgow Herald, Norwich Daily Press, Hospital, Army and Navy Gazette,* &c.

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